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# THE STRATEGIC FEASIBILITY OF GLOBAL ZERO: A GENERATIONAL APPROACH

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A Thesis

Presented to

the Faculty of the Josef Korbel School of International Studies

University of Denver

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In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

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by

Balazs Martonffy

August 2012

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Title: THE STRATEGIC FEASIBILITY OF GLOBAL ZERO: A GENERATIONAL APPROACH

Advisor: Dr. Rachel Epstein

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### **Abstract**

This thesis examines the requirements for a world without nuclear weapons and the steps required for further reductions. It situates nuclear weapons within other weapons of mass destructions and outlines their dangers. Through the examples of the People's Republic of China, France, and the United States, the thesis explores the rationale behind state acquisition of nuclear weapons. The thesis combines the idealistic commitment of nuclear abolition movements with the national security realities of nuclear weapons states. It outlines the steps necessary for achieving a world without nuclear weapons through multiple stages, each with specific goals that have to be met before embarking on the next stage. The thesis posits that any meaningful exploration of a world without nuclear weapons can only be achieved through gradual generational change. Finally, it shows how a world without nuclear weapons would look like and the differing interpretations of global zero.

## **Acknowledgements**

The author would like to thank Dr. Rachel Epstein for her guidance and perseverance; Dr. Deborah Avant for her input with regards to exploring alternate considerations for thesis; Dr. Ned Vanda for his efforts in limiting the scope of the thesis; Colonel Thomas Drohan, USAF, for his strategic vision; Christopher Gracey for his reading and editorial revisions; and John and Anna Sie, without whose support this work would not have been possible.

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## **Chapter 1 – Introduction: The World of Nuclear Weapons**

"A world free of nuclear weapons would be a global public good of the highest order."<sup>1</sup>

*United Nations Secretary-General Ban Ki-moon*

There is no quick and easy way of achieving a world free of nuclear weapons. Despite what some opponents of nuclear weapons may say, a premature drawdown process poses greater dangers than the status quo. Yet, nuclear weapons pose a danger to society, inasmuch as global thermonuclear war, although low in probability, would be highly cataclysmic. With the changes that conflict has undergone in the last twenty years, the concept of a nuclear free world is worth pursuing. While counter-intuitive and ahistorical, because technologies of war have only been deemed inhumane and successfully avowed in the last one hundred years, the concept of a world free of nuclear weapons is plausible. Decaying nuclear weapons stockpiles make the discussion relevant and pertinent.

There have been major shifts caused by globalization in the international security environment. The arms control regime and the treaties of the late 20<sup>th</sup> century best

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<sup>1</sup> Ban Ki Moon's address to the East-West Institute, 24 October 2008.

exemplify how the end of World War II has shaped the international security environment. Michael O’Hanlon states, “During the Cold War and its immediate aftermath, the nuclear superpowers considered it unrealistic to do much more than try to gradually reduce nuclear arsenals from their astronomical sizes.”<sup>2</sup> Recently, arms control has achieved considerably more. In the Modern Era, arms control, as part of the normative discussion, has contributed meaningfully to the international security environment with multiple treaties including the Chemical Weapons Convention (CWC), the Biological Weapons Convention (BWC), and the Convention on Certain Conventional Weapons. These treaties limited the size and destructive capability of states. Therefore, the concept of a nuclear weapons free world, earlier subjugated to the realm of a small fringe group of society, now has merit.

The strategy presented here attempts to reconcile the symbolic strength of the nuclear abolitionist movement with the cold realities of the Nuclear Age. The thesis attempts to identify requirements necessary on the road to zero, then outline a generational approach to the stages required for achieving a world without nuclear weapons. Before the exploration of the road to zero, the international community must first meet four prerequisites. First, the international community has to disassociate Nuclear Weapons from other Weapons of Mass Destruction (WMD), through focusing on the unique qualities, namely their cataclysmic destructive power and inherent deterrent capability. Second, through the detailed exploration of the “No First Use policy” through the case of the People’s Republic of China, it has to recast the idea that nuclear weapons

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<sup>2</sup> O’Hanlon, Michael. *Technological Change and the Future of Warfare*. Brookings, Washington, 2000.

only counter other nuclear forces. Because of this recasting, strategic efficiency and effective allocation of resources will enter into the calculation. Until this is not a reality, the nuclear umbrella and extended deterrence realities of nuclear weapons states make any major breakthrough unrealistic. Third, the international community has to remove the gain of prestige associated with nuclear weapons and create a pariah status for nations who either pursue such weapons, or are in non-compliance with the road to zero. French nuclear history, combined with adequate international pressure, shows that this is feasible given an alternative direction for the state to channel their prestige ambitions. Finally, for the process to be credible there has to be an effective international regime with verification technology, implementation resources, and authority to deal with non-compliance, along with a leader who is willing to commit enough resources to make this a reality: the United States.

Once these requirements are met, the road to zero can be meaningfully pursued through multiple stages. While the thesis argues that a generation must pass between each stage for adoption of the new status quo, if the requirements for each are met earlier, the time between each can be shortened. The first such stage is entitled the **Post-Cold War Generation**. The international security environment is currently in this stage. This stage must efficiently deal with the end of the Cold War and get rid of the concept of US-Russian nuclear supremacy by bringing their nuclear arsenal to roughly one thousand each – and thereby demystifying the ‘nuclear superpower’ status of the two. The following stage may be called **the 1,000ers**. This stage focuses on equalizing nuclear weapon states through individual ascription to minimal deterrence, which, with current



nuclear weapons stockpiles, can be said to happen at 200 nuclear warheads. Recognition of the new status quo will take time. Following the completion of this stage and the adoption of two hundred as the new nuclear arsenal status quo, **The 200 Club** can focus on bringing this number down even further through efficiency in strategy. The smaller the number of nuclear warheads, the easier it is to maintain supervision and appropriate safeguard measures. Also, inasmuch as deterrence works, the cost of it can also be ‘controlled’. Resources spent on maintaining a larger deterrent force than needed are resources wasted – alternate methods would increase strategic efficiency for states to fulfill their other obligations towards their population. The penultimate stage can be labeled as **Asymptotic Minimal Deterrence**. This interim stage is drawing these numbers down even lower, with multi-national talks. Once the number 200 seems as outdated and as illogical as 40,000, the nuclear deterrent needed can be further reduced, to an even smaller number. The number of nuclear weapons needed is based on future alliances and geo-strategic considerations, but while converging to zero, does not actually achieve it. The final, end-stage is the generation of the **Trust Fund Kids**. This stage is characterized by final de-operationalization of nuclear weapons. This is the crucial next step, when the “200” society already ascribing to minimal nuclear deterrence realizes that the possibility of nuclear war can be further reduced by increasing the time it takes for states to potentially use these weapons. Populations would perceive themselves safer knowing that it would take a longer designated period of time (perhaps even a week) for other states to reassemble nuclear weapons and potentially launch against them.

Each stage is also complemented by steps that have to be taken on the road to zero, yet their timing might vary – some may happen concurrently at the outset, or be reaffirmed throughout each stage, or even neglected until the end of specific stages. While these steps are incremental, albeit not crucial, to the successful implementation of each stage, their effects on the road to zero are paramount. These additional steps, the positive effects of smaller nuclear arsenals with regards to securing them from accidents and thefts, along with their normative re-distributing as weapons of last resort; the positive effect of the reinforced road to zero on proliferation; de-alerting and its adjustment of conceptual definitions of retaliation; and secure and international systems of verification and implementation of these regimes, are all part of the solution.

## **Chapter 2: The Problematic Nature of Nuclear Weapons**

Even though the argument persists as to what is considered a Weapon of Mass Destruction, nuclear weapons possess a single unique characteristic that sets them apart from the others in a significant manner: their capability as a deterrent. This uniqueness of nuclear weapons within the arms control regime needs to be made clear. Combining chemical, biological, radiological, and nuclear into one group, CBRN, is artificial. While all are technically weapons of mass destruction, their inherent capabilities and intrinsic characteristics make them each a unique case. The umbrella term for all three as WMD, weapons of mass destruction, is sometime misleading and uninformative especially when the differences are considered. The Commission on Conventional Armaments states that:

“[WMD are] . . . atomic explosive weapons, radio active material weapons, lethal chemical and biological weapons, and any weapons developed in the future which have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above.”<sup>3</sup>

This characterization is limiting for strategy and unsustainable. If all weapons of mass destruction are unlawful and inhumane, the logical conclusion on the global scale is that, following closely in the footsteps of the BWC and the CWC, a Nuclear Weapons Convention should be just over the horizon. Yet no such treaty is under serious

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<sup>3</sup> Commission for Conventional Armaments, UN document S/C.3/32/Rev.1, August 1948, as quoted in United Nations, Office of Public Information, The United Nations and Disarmament, 1945–1965, UN Publication 67.I.8, 28.

consideration. The Biological Weapons Convention, the first multilateral treaty banning an entire category of weapons,<sup>4</sup> came into effect in 1975,<sup>5</sup> and with 165 states as signatories, it can be considered a major success. Similarly, the Chemical Weapons Convention, that entered into force in 1997, has 188 party states and can also be considered a major success of the arms control regime.<sup>6</sup> State actors have restrained from using these weapons since these treaties. “In contrast to the nuclear efforts of North Korea, Iran, and Syria, no states are newly pursuing, or suspected of pursuing, in an overt or exposed manner, chemical or biological weapons.”<sup>7</sup>

Both from a normative, and a state-level realist argument, these weapons of mass destruction are separate entities and have to be treated as such. As Ashton Carter states:

“The phrase “weapons of mass destruction” . . . is an amorphous one, changing meaning according to the whims of the speaker. Raising the specter of WMD is more a way by which politicians assign blame or take a stand on seemingly objective moral standards than a way by which they assess a particular weapons system.”<sup>8</sup>

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<sup>4</sup> While earlier attempts do exist, for example the Second Lateran Council and its ban on the use of crossbows, it was far from multilateral (issued by the Pope of the Roman Catholic Church) and from universal (only banned the use against Christian targets. The ban was also ignored almost completely).

<sup>5</sup> “Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction”, text from the United Nations Office at Geneva website, URL: [http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/C4048678A93B6934C1257188004848D0/\\$file/BWC-text-English.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/C4048678A93B6934C1257188004848D0/$file/BWC-text-English.pdf), accessed March 27<sup>th</sup>, 2012.

<sup>6</sup> “Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction”, text taken from United Nations Treaty Collection, URL: [http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtsg\\_no=XXVI-3&chapter=26&lang=en](http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtsg_no=XXVI-3&chapter=26&lang=en), accessed March 28<sup>th</sup>, 2012.

<sup>7</sup> Blunn, Elaine M. (ed) “The Proliferation of Weapons of Mass Destruction” in *Global Strategic Assessment 2009*. From National Defense University website, URL: <http://www.ndu.edu/inss/docuploaded/02-GSA2009>, accessed March 31<sup>st</sup>, 2012.

<sup>8</sup> Carter, Ashton B. “How to Counter WMD,” *Foreign Affairs* September/October 2004, 73.

He goes on to limit WMD from the traditional triad of nuclear, biological, and chemical weapons to just nuclear and biological.<sup>9</sup> Harigel comes at it from a different aspect. He states that neither chemical nor biological weapons should be considered as WMD, but that conventional ammunitions should, based on the number of casualties they inflict.<sup>10</sup> The problems of consolidation WMD into one category thus continues well into the 21<sup>st</sup> century. The United States Air Force, guardian of the United States nuclear arsenal, is currently approaching the problem on multiple tracks. The Air Force Staff is attempting to develop alternative definitions of WMD based on projected destructive capabilities.<sup>11</sup> According to Carus, there are problems with this approach: “The authors of that study suggest adoption of a quantitative, effects-based definition, but admitted to failure in attempting to create such an alternative.<sup>12</sup>” Similarly, the United States Air Force Academy is currently pursuing a course designated Weapons of Mass Effect to both broaden and specify the concept.<sup>13</sup> Both of these approaches attempt to encompass all WMD under a single concept but fall short of achieving a coherent single approach.

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<sup>9</sup> Ibid.

<sup>10</sup> Gert G. Harigel, “Introduction to Chemical and Biological Weapons—Chemical and Biological Weapons: Use in Warfare, Impact on Society and Environment,” Carnegie Endowment for International Peace, 2001, URL: [www.ceip.org/files/Publications/Harigelreport.asp?p=8&from=pubauthor](http://www.ceip.org/files/Publications/Harigelreport.asp?p=8&from=pubauthor), accessed March 26<sup>th</sup>, 2012.

<sup>11</sup> “Emerging WMD Technologies and the U.S. Air Force,” Air Force Emerging Issues Project, December 2004.

<sup>12</sup> Carus, Seth W. “Defining ‘Weapons of Mass Destruction’”, Center for the Study of Weapons of Mass Destruction, Occasional Paper, January 2006.

<sup>13</sup> USAFA, DFMI, Military and Strategic Studies Course, *Weapons of Mass Effect* (tentative title), forthcoming.

As stated above, in many ways, chemical, biological, and nuclear weapons all fall under the category of WMDs, but only one serves deterrence purposes: nuclear. Biological weapons and Chemical weapons do not, in the conventional definition of deterrence, serve as deterrent weapons. Rather, they are considered purely offensive weapons (in perception that is, which is what deterrence mainly relies on; all of the above can be used as defensive traps triggered by invasion). Outlawing offensive weapons, given the fact that wars in international normative society are to be defensive, is inherently easier to accomplish than outlawing defensive (with deterrent capabilities) weapons. Nuclear weapons are considered by many states “the ultimate guarantor of national security.” The major difference is that chemical and biological weapons can reliably only be used as coercive weapons, but not as weapons of deterrence. Admittedly, a single weaponized virus may cause more psychological damage than a single nuclear warhead, yet weaponized strands of such virus have virtually no testing capabilities, thus defy the logic of nuclear deterrence. Stable nuclear dyadic relations rely on proof of testing, such as US-Soviet relations and India and Pakistan’s recent history.

Another factor contributing to the deterrent factor of nuclear weapons is the taboo on their non-use. As Nina Tannenwald states, the use of nuclear weapons has had a taboo on it for the past 70 years.<sup>14</sup> The United States had nuclear supremacy past 1945 until the Soviets developed sufficiently advanced delivery methods for their own nuclear weapons developed in 1949. Yet the US did not use this inherent advantage in any offensive way. The destruction of Nagasaki and Hiroshima did start the taboo. Only acquisition of

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<sup>14</sup> Tannenwald, Nina. *The Nuclear Taboo: The United States and the Non-use of Nuclear Weapons since 1945*. Cambridge, Cambridge, 2007.

nuclear weapons is limited by a treaty – the Nuclear Non-Proliferation Treaty. The NPT identifies the Nuclear Weapons States and the non-nuclear weapon states, and, in Articles I and II

(“Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices”), effectively finalizes the nuclear weapons reality.<sup>15</sup> This nuclear grand bargain also has two other major parts: first, that those states in possession of nuclear weapons work on eliminating these (“undertake effective measures in the direction of nuclear disarmament”), and second, that they share nuclear energy technology with signatories.<sup>16</sup>

Alternate uses for nuclear weapons, such as planetary defense, may also warrant their retention. As an Air University Space study suggests:

“Now that it is recognized that collisions with objects larger than a few hundred meters in diameter not only can threaten humanity on a global scale but have a finite probability of occurring, means for mitigating them seem clearly worth investigation. It should also be recognized that the technology required for a system to mitigate the most likely of impact scenarios is, with a little concerted effort, within humanity's grasp. Such a system could use the latest nuclear explosives, space propulsion, guidance, sensing and targeting technologies coupled with spacecraft technology.”<sup>17</sup>

Thus, the future may require that some supra-national governing authority maintain a pre-approved number of nuclear weapons, accepted even by those most staunchly opposing

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<sup>15</sup> Nuclear Non-Proliferation Treaty, text from the United Nations Review Conference website, URL: <http://www.un.org/en/conf/npt/2010/npttext.shtml>, accessed March 25, 2012.

<sup>16</sup> Ibid.

<sup>17</sup> “Preparing for Planetary Defense: Detection and Interception of Asteroids on Collision Course with Earth”, Air University Spacecast 2020: Into the Future, URL: <http://www.fas.org/spp/military/docops/usaf/2020/app-r.htm>, accessed March 25, 2012.

nuclear weapons. If weapons that are more destructive than nuclear weapons are invented, the entire situation shifts dramatically, perhaps to the point of talking about nuclear weapons will no longer be relevant. Yet the current security environment still has nuclear weapons under a states' weapons arsenal. Their dangers, outlined below, prove that nuclear weapons pose a very credible threat.



### Chapter 3: The Dangers of Nuclear Weapons

The Nuclear Non-Proliferation Treaty warns of the dangers of nuclear weapons by stating that the parties are “*Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples*” and commit themselves to global nuclear disarmament to put an end to the risk of nuclear war.<sup>18</sup>

Above the benefits of nuclear weapons were examined for those states having them. The stable nuclear dyads currently present are limited in use and even more limited by the time frame they apply to. Devin Hagerty posits that “There is no more ironclad law in international relations that this, nuclear states do not fight wars with each other.”<sup>19</sup> Whether this axiom is true depends on the observer’s point of view. India and Pakistan has had conflict between armed forces after both acquired nuclear weapons.<sup>20</sup> Even if one accepts Hagerty’s conclusion, the logic of the past need not apply to the future. The most vivid example is Kantian economic interdependence theory, which, albeit rational, did

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<sup>18</sup> Nuclear Non-Proliferation Treaty, text from the United Nations Review Conference website, URL: <http://www.un.org/en/conf/npt/2010/npttext.shtml>, accessed March 25, 2012.

<sup>19</sup> Hagerty, Devin. *The Consequences of Nuclear Proliferation*, p. 184, in Waltz, Kenneth, and Sagan, Scott. *The Spread of Nuclear Weapons*. Norton, New York, 2003.

<sup>20</sup> Waltz, Kenneth, and Sagan, Scott. *The Spread of Nuclear Weapons*. Norton, New York, 2003., p. 95.

not apply to the start of World War I, where France and Germany were each other largest trading partners.

Kenneth Waltz and Scott Sagan enter into the debate of whether the increase in nuclear weapons will be “better” or “worse” in *The Spread of Nuclear Weapons: A Debate Renewed*.<sup>21</sup> While Waltz’ argument that “Many Will Be Better” does have its merits, Sagan effectively counters them and outlines why the further spread of nuclear weapons will pose dangers instead of achieving the stabilizing effects Waltz outlines. In the following, the dangers of nuclear weapons are outlined, in a broad sense. These dangers fall into five separate categories: acquisition of nuclear weapons by other state actors, acquisition by non-state actors, use of nuclear weapons by actors, use by non-state actors, and nuclear accidents. A reconfigured stockpile, with smaller numbers with warheads stored separately from delivery vehicles, would decrease the risk associated with each of the five categories.

#### *Acquisition by State Actors – Proliferation and Nuclear Tipping Points*

As Campbell and Einhorn point out in their conclusions for *The Nuclear Tipping Point*, “changes in the international security system since the end of the cold war have created an environment more favorable for nuclear proliferation.”<sup>22</sup> Some would argue that this view is not new and has been the ‘norm’ for those concerned by proliferation –

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<sup>21</sup> *Ibid.*

<sup>22</sup> Campbell, Kurt M., and Einhorn, Robert J. “Concluding Observations” in Campbell, Kurt M., Einhorn, Robert J., and Reiss, Mitchell B. (eds) *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*. Brookings, Washington DC, 2004., p. 319.

yet their dystopian visions had not come true. Former US President John F. Kennedy said in his Third Nixon-Kennedy Presidential Debate that

“There are indications because of new inventions, that 10, 15, or 20 nations will have a nuclear capacity, including Red China, by the end of the Presidential office in 1964. This is extremely serious. . . I think the fate not only of our own civilization, but I think the fate of world and the future of the human race, is involved in preventing a nuclear war.”<sup>23</sup>

His prediction turned out to be inaccurate, as today’s security environment has only nine states possessing nuclear weapons, with one of those being purposefully opaque on their stance (Israel). Yet his fear is not unwarranted, and after his cut-off date of 1964, by which time the five Permanent Members of the UN National Security Council (and later the Nuclear Weapons States of the Nuclear Non-proliferation Treaty of 1968), only so-called rogue states have acquired the bomb (India, Pakistan, North Korea) with the exception of Israel.

In effect, the value of nuclear weapons in the Cold War era is summed up best by Reiss in his “Nuclear Tipping Point” essay. In it, he states: “Deterrence – the idea that the United States could prevent a nuclear attack by the credible threat to retaliate with a devastating nuclear second strike – was widely credited with preserving the cold war’s nuclear peace.”<sup>24</sup> Inasmuch as deterrence is concerned, Reiss’ assessment proved correct, at least in correlation. Some would argue that neither the US or the Soviet Union ‘wanted’ to attack the other with nuclear weapons and thus their strategic policies were

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<sup>23</sup> “JFK on Nuclear Weapons and Non-Proliferation”, Carnegie Endowment for International Peace website, URL: <http://carnegieendowment.org/2003/11/17/jfk-on-nuclear-weapons-and-non-proliferation/q94>, accessed March 28, 2012.

<sup>24</sup> Reiss, Mitchell B. “The Nuclear Tipping Point” in Campbell, Kurt M., Einhorn, Robert J., and Reiss, Mitchell B. (eds) *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*. Brookings, Washington DC, 2004., p. 11

just as much a reflection on their normative unwillingness to use weapons of such destructive capabilities as on their strategic calculations.

Yet as President Obama points out, the past system is in decline. The stable bipolar US-Soviet nuclear relationship is no longer the norm, nor is it the defining convention of the international security environment of today. As Reiss points out in his essay, “Nuclear Tipping Point”: “New threats have arisen while the nuclear taboo has weakened.”<sup>25</sup> Proliferation is a major threat to the nuclear balance of both regions and, consequently, the world. Iranian nuclearization is considered by many to be currently the largest proliferation threat to both the non-proliferation regime and Middle Eastern security. The best example to show how interconnected the problem of proliferation is in the international environment is by President Obama, in his Prague speech in 2009: “If the Iranian threat is eliminated, we will have a stronger basis for security, and the driving force for missile defense construction in Europe will be removed.”<sup>26</sup> Iranian nuclearization, at first, is a major destabilizing factor for Israel – and as such, to its ally the United States. Israeli strategic culture cannot allow a state that openly calls for its destruction to achieve the means of doing so. Conflict is almost certainly based on the two countries’ inevitable clash of strategic cultures. With Iran being able to blame Western countries as hypocritical to their commitment to their NPT commitment, the UN Security Council has no ‘normative’ tools at its disposal to counter Iran’s goals. Those states that have acquired nuclear weapons outside of the NPT have done so for self-

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<sup>25</sup> Ibid., p. 13.

<sup>26</sup> Obama’s Prague Speech, April 2009. URL: [http://www.whitehouse.gov/the\\_press\\_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered](http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered)

survival, prestige, or relative geo-strategic gains reasons (India, Pakistan, and Israel are not signatories, and North Korea has resigned from the treaty), but state actor proliferation can be limited by current nuclear powers working on relinquishing their nuclear weapons.<sup>27</sup>

In effect, Nina Tannenwald's taboo on use of nuclear weapons could be broadened to acquisition of them if all states are on board. Perhaps the greatest counter to this would be Russian nuclear posture that states willingness to strike first with nuclear weapons, yet Russian strategic culture most likely uses this as a ploy to further Russian state security and prestige in the international community. Khrushchev's son makes the claim that the entire Soviet arms build-up was not intended for offensive purposes, but simply as a form of re-assured defense. Given Russian strategic culture of geographic openness and constant invasion, a higher buildup is perhaps justified even from a strictly defensive stance. Iran's nuclear ambitions are destabilizing for both the region, with the Kingdom of Saudi Arabia and Turkey (and others) proliferating in kind. Etel Solingen argues that a "nuclearized Iran could trigger nuclear dominoes in Saudi Arabia, Syria, Turkey, and Egypt".<sup>28</sup> In effect,

"building a strong international norm against the proliferation of such capabilities, even under the international safeguards, would not only raise the barrier to a state wishing to pursue nuclear weapons quickly and directly, but it would also make it harder to pursue a hedging strategy of acquiring a dual-use nuclear infrastructure and holding open the option for breakout at a later date."

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<sup>27</sup> "Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country", as stated in the Nuclear Non-Proliferation Treaty.

<sup>28</sup> Solingen, Etel. *Nuclear Logics*. P. 33.

Thus acquisition of nuclear weapons by state actors is a major threat, and the non-proliferation regime must consider appropriate responses to it. Some would posit that: “We can take some comfort in the [...] conclusion that while the tipping-point phenomenon may be an apt metaphor for the process of proliferation, we are neither at the tipping point nor destined to reach it.”<sup>29</sup> Yet the worries are more relevant and have larger potential for destruction:

"But there is something very troublesome about this metaphor: movement toward the tipping point starts very slowly, picks up speed, and then becomes swift and irresistible. [...] By the time the tipping process becomes readily identifiable, it may be very difficult to stop. And it [the international community] should act now, before it's too late."<sup>30</sup>

#### *Acquisition by Non-state Actors – Asymmetric Warfare*

As President Obama further states: “So, finally, we must ensure that terrorists never acquire a nuclear weapon. This is the most immediate and extreme threat to global security.”<sup>31</sup> Acquisition of nuclear weapons by non-state actors is probably the largest threat to both the proliferation regime and to individual states, and as such, their populations. Most conventional theorists posit that deterrence fails against non-state

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<sup>29</sup> Campbell, Kurt M., and Einhorn, Robert J. “Concluding Observations” in Campbell, Kurt M., Einhorn, Robert J., and Reiss, Mitchell B. (eds) *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*. Brookings, Washington DC, 2004., p. 333.

<sup>30</sup> *Ibid.*, p. 334.

<sup>31</sup> Obama’s Prague Speech, April 2009. [http://www.whitehouse.gov/the\\_press\\_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered](http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered)

actors vis-à-vis nuclear weapons – some<sup>32</sup> posit that deterrence by denial would be a viable alternative. Non-state actor acquisition of nuclear weapons is the largest threat to the international security environment. Nuclear weapons are not the only sort of WMD that are worrisome – the others are biological and chemical. Presidential Decision Directive (PDD) 39, “U.S. Policy on Counterterrorism,” issued on June 21, 1995, by the National Security Council under the signature of President Clinton, equates WMD with NBC weapons:

“The United States shall give the highest priority to developing effective capabilities to detect, prevent, defeat and manage the consequences of nuclear, biological or chemical (NBC) materials or weapons use by terrorists. The acquisition of weapons of mass destruction by a terrorist group is unacceptable.”<sup>33</sup> It is not only the United States who fears for such outcomes. The French advocate

a similar stance in their *White Paper on Defense and National Security*.<sup>34</sup> The concept that post-Soviet era nukes are both unsafely guarded and as “loose nukes” are potentially available to non-state actors is both quite possible and extremely dangerous.

“Under the Nunn-Lugar threat reduction programs, the United States over the last decade has devoted well over \$7 billion to addressing this threat [limiting available fissile material] by assisting Russia and other former states of the Soviet Union to secure, account for, dismantle, and eliminate former Soviet weapons of mass destruction and related materials and infrastructure<sup>35</sup>,”

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<sup>32</sup> Schmitt, Eric, and Shanker, Thom. *Counterstrike*. Henry Holt, New York, 2011. P. 46-64.

<sup>33</sup> Presidential Decision Directive (PDD) 39, “U.S. Policy on Counterterrorism,” issued on June 21, 1995.

<sup>34</sup> <sup>34</sup> *French White Paper on Defence and National Security*, June 2008, from Council on Foreign Relations, URL: <http://www.cfr.org/france/french-white-paper-defence-national-security/p16615>, accessed November 5<sup>th</sup>, 2011.

<sup>35</sup> Campbell, Kurt M., and Einhorn, Robert J. “Concluding Observations” in Campbell, Kurt M., Einhorn, Robert J., and Reiss, Mitchell B. (eds) *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*. Brookings, Washington DC, 2004., p. 343.

as stated by Einhorn and Campbell. The movie *Countdown to Zero*<sup>36</sup> shows this possibility in depth with interviews of former personnel guarding nuclear weapons. It also goes into the ramifications of the AQ Khan network and the potential for non-state actors to secure nuclear weapons through it. Dr. Pervez Hoodbhoy, a senior nuclear scientist and current head of the Quaid-e-Azam University in Islamabad, Pakistan, states explicitly that given the current power struggles within the Pakistani elite, the possibility of a nuclear weapon being misplaced by accident, stolen by force, bought or acquired by other means by non-state actors is high.<sup>37</sup> Thus acquisition by non-state actors is not as remote as one would hope to believe. The true danger is from these actors using weapons of mass destruction and nuclear weapons.

#### *Use by State Actors*

Although most experts would agree that the use of nuclear weapons by state actors is very remote, this possibility is not ruled out. Etel Solingen sums the situation. Furthermore, nuclear weapons continue to be included in strategic doctrines. The United States has only committed to “no first use” under certain conditions (vis-à-vis an NPT member, if the latter does not attack the United States or its allies). The Clinton administrations’ 1994 Nuclear Posture Review reaffirmed the role of nuclear weapons and did not rule out “first use”. The 2002 review instructed the Department of Defense to draft contingency plans for using nuclear weapons even against non-nuclear states. A

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<sup>36</sup> *Countdown to Zero*. Dir. Lucy Walker. Magnolia Pictures, 2010. Film.

<sup>37</sup> “How to Build a Nuclear Bomb”, presentation given at the 2011 Global Zero Convention, Washington, DC, George Washington University’s Eliot School of International Affairs.



2005 draft revising the 1995 doctrine on nuclear use contemplated reliance on nuclear weapons to preempt attacks by state or non-state actors. Russia reversed Soviet no-first use commitments.<sup>38</sup> Even those who have a strict no-first-use policy, such as the People's Republic of China, exhibit worrisome behavior. General Zhu Chengu, dean of the National Defense University in China, said in 2005 that China could launch a nuclear attack on hundreds of US cities if the United States decided to interfere militarily with Taiwan.<sup>39</sup>

*Use by Non-state Actors: Nuclear Terrorism where deterrence does not apply*

Use by non-state actors is almost directly linked to acquisition by non-state actors, that is, those who have terrorist goals as their objectives. These violent non-state actors have been actively pursuing acquisition of WMD, and specifically, nuclear weapons, and have in rhetoric linked their acquisition to direct use. Deterrence, as outlined below, is not readily applied to their acquisition, and while “prestige, recognition” and other non-security related reasons may play into their want for nuclear weapons, their main goal is use. In most conventional theory, deterrence by punishment is a concept which cannot be applied to terrorist cells – thus non-state actor acquisition of nuclear weapons will lead to their use. As Al Qaeda's communications tell us, they seek WMD and will use them.

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<sup>38</sup> Solingen, Etel. *Nuclear Logics: Contrasting Paths in East Asia and the Middle East*. Princeton, Princeton, 2007, p. 33.

<sup>39</sup> “China refuses to back down on general's nuclear threat over Taiwan”, Agence France Presse, July 16<sup>th</sup>, 2005. Taken from Space War website reporting AFP article, URL: <http://www.spacewar.com/news/nuclear-doctrine-05zm.html>, accessed March 28, 2012.

Deterrence by punishment is a very constricted concept when applied to non-state actors and terrorist cells. Some theorists would argue that this is not a major threat, as they can be deterred. Schmitt and Shanker point out the obvious difference between state and non-state actor deterrence: “Terrorists hold no obvious targets for American retaliation – targets like Soviet cities, factories, military bases and missile silos.”<sup>40</sup> They go on to outline that: “Part of deterrence strategy is to make sure that the other side knows that America will stop at nothing to punish it.”<sup>41</sup> Yet stopping at nothing is not the same as threatening total annihilation of Soviet existence, regardless of their success of attack on the United States. While Schmitt and Shanker would argue that deterring terrorists is a feasibility, in reality what they are saying is that a “deterrence by denial” concept would possibly “dissuade” terrorists from attacking.

This conceptual approach is faulty for multiple reasons. First, the amount of resources needed to implement their strategy is extremely high. Second, those steps the authors outline do not conclusively state that the strategy merits the resources: the same resources would be better used to combat terrorism in other forms. Third, even if they achieve their strategic objectives, the only thing that will change is terrorist re-interpreting their needed “chance of success” to strike. Thus, as outlined above, neither deterrence by punishment nor deterrence by denial are credible alternatives to combatting terrorists if and when they acquire nuclear weapons. They then pose a very clear and present danger. In “Combatting Nuclear Terrorism”, USNORTHCOM J-3 Staff tells it

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<sup>40</sup> Schmitt, Eric, and Shanker, Thom. *Counterstrike*. Henry Holt, New York, 2011. p. 58.

<sup>41</sup> *Ibid.*, p. 59

would cause “unspeakable damage – not only physical, but also psychological, economic and geopolitical damage as well.”<sup>42</sup> The best option for limiting and potentially eliminating non-state actor use of nuclear weapons is to decrease the number of warheads and, as the thesis’ end-state solution advocates, storing them in separate areas.

### *Nuclear Accidents*

The final, and perhaps greatest, danger nuclear weapons pose is accidents. Nuclear weapons accidents can be categorized in two separate categories: first, the direct - nuclear weapons accidentally exploding or causing other kind of damage, but with no other consequences; and second, the indirect – the presence of nuclear arsenals and other accidents that potentially can trigger an unwanted nuclear exchange, limited or escalating into global thermonuclear war. The first, the threats of direct accidents are accurately described by Scott Sagan, and history serves with multiple examples for the second. During the Cold War, multiple scenarios almost triggered global thermonuclear war.

“Direct” threats were sometimes underplayed during the Cold War in an effort to keep nuclear technology from being discredited by grass-roots organizations. As Scott Sagan states

“Throughout most of the cold war, there was [...] underestimation of the risks of nuclear weapons accidents and even nuclear war. Part of the reason for this underestimation was that we lacked adequate theories about the underlying political and organizational causes of accidents with hazardous technologies”<sup>43</sup>

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<sup>42</sup> “Combatting Nuclear Terrorism”, *Agora: Weapons of Mass Destruction*, Volume 2, No. 2, 2009. P. 44.

<sup>43</sup> Waltz, Kenneth, and Sagan, Scott. *The Spread of Nuclear Weapons: A Debate Renewed*. P. 161.

He goes on to state that that “Even after serious accidents, such as when a nuclear bomber crashed in Greenland in 1968 or a nuclear missile blew up in Arkansas in 1980, the public was told that were no serious risks involved. ‘Don’t worry, be happy’ was the message.”<sup>44</sup> The message has shifted considerably by today.

The “indirect” threats associated with nuclear weapons are those that might inadvertently trigger nuclear war. In 1961, NORAD lost all communication with Strategic Air Command HQs and thus Ballistic Early Missile Warning Sites. While all B-52s started their engine, the communication issue was resolved. In 1962, a B-52 navigation error led it dangerously close to Soviet airspace, who would have interpreted it as a sign of aggression. Yet perhaps the greatest example for a potentially cataclysmic accident is the 1995 missile launch. Russian officials observed an unknown missile on a trajectory that was headed for Russian air space. For the first time ever, the “nuclear briefcase” that at the time President Yeltsin held was activated for emergency use.<sup>45</sup> The missile continued on its path,

“but the radar crews continued to track their targets, and after about eight minutes (just a few minutes short of the procedural deadline to respond to an impending nuclear attack), senior military officers determined that the rocket was headed far out to sea and posed no threat to Russia.”<sup>46</sup>

It turned out that it was a Norwegian planned launch that was weeks earlier announced to Russians but did not reach proper authorities. Yet even in a post-Cold War

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<sup>44</sup> *Ibid.*, p. 167.

<sup>45</sup> Blair, Bruce G., Feiveson, Harold, and von Hippel, Frank N. “Who's Got the Button? Taking Nuclear Weapons off Hair-Trigger Alert”, *Scientific America*, November 1997, from Center for Defense Information website, URL: <http://www.cdi.org/aboutcdi/SciAmerBB.html>, accessed April 1, 2012.

<sup>46</sup> *Ibid.*

world, the option of immediate retaliation before being subject to a strike was seriously considered. De-alerting nuclear stockpiles and separating warheads from delivery vehicles significantly decreases the chance of accidents and possible miscalculation.

## **Chapter 4: The Changing Reality of War – Introduction of Normative Realities to Strategic Dialogues**

With the changes that conflict has undergone in the last twenty years, the concept of a nuclear free world is worth pursuing. While counter-intuitive and ahistorical, inasmuch as technologies of war have only been deemed inhumane and successfully avowed in the last one hundred years, the concept itself is, in the long run, plausible. There have been major shifts caused by globalization in the international security environment. The arms control regime and the treaties of the 20<sup>th</sup> century are perhaps the best example of how the end of World War II has shaped the international security environment. As Michael O’Hanlon states: “During the Cold War and its immediate aftermath, the nuclear superpowers considered it unrealistic to do much more than try to gradually reduce nuclear arsenals from their astronomical sizes.”<sup>47</sup> Yet in the recent past arms control has achieved considerably more: in the Modern Era, Arms Control, as part of the normative discussion, has contributed meaningfully to the international security environment with multiple treaties: the Chemical Weapons Convention, the Biological Weapons Convention, the Convention on Certain Conventional Weapon, which did limit the size and destructive capability of the states themselves.

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<sup>47</sup> O’Hanlon, Michael. *Technological Change and the Future of Warfare*, Brookings, Washington DC, 2000. p. 160.

Perhaps the greatest success of Arms Control and the most elaborate example for how the characteristics of war have changed is the INF treaty: the Intermediate-range Nuclear Weapons Treaty. This treaty has effectively outlawed intermediate-range nuclear weapons that were deployed in Europe to ease the stand-off between the Soviet Union and the United States, and consequently, NATO. The success of this treaty shows that states, in the Modern Era, are willing to forego potential strategic attack options to achieve stable relations. The Nunn-Lugar Cooperative Threat Reduction Agreement also builds on cooperation between the US and Russia to reduce threats in the future. Both of these show major changes in the international environment and the changes that the character of war has undergone – normative concepts have meaningfully entered the picture. So, as O’Hanlon states, the concept of a nuclear weapons free world, earlier subjugated to the realm of a small fringe group of society, now has merit. “In the very last years of the century [20<sup>th</sup>], however, what had heretofore been an action item for the extreme Left became almost a mainstream cause.”<sup>48</sup> He goes on to outline that “Its members worry, not unreasonably, that, if retained, nuclear weapons will someday be used, with catastrophic results for those immediately concerned and perhaps broader swaths of humanity as well.”<sup>49</sup>

The changes to war as outlined above are relevant to understanding that the way forward for nuclear weapons free world is actually attainable and a logical step for the non-proliferation regime. The Treaty of Westphalia placed the State as the ultimate

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<sup>48</sup> O’Hanlon, Michael. *Technological Change and the Future of Warfare*, Brookings, Washington DC, 2000.

<sup>49</sup> *Ibid.*, p. 161.

player in international relations, but with the advent of the United Nations, there is now a world-wide norm to which states that wish to wage war must conform. Albeit not always effective, the norm is still present and has had successes. The concept of the possibility of universally distributing blame through justice in war entered societal reality in the 20<sup>th</sup> century and was only codified in the latter half of it, coinciding with the rise of nuclear weapons. Michael Walzer in his book *Just and Unjust Wars* states that “It is a crime to commit aggression [i.e., start wars].”<sup>50</sup> This specific social construct is only relevant in a world where geopolitical realities have shifted significantly. Only with the creation of the United Nations and its introduction of two clauses – “to take effective collective measures for the prevention and removal of threats to the peace”<sup>51</sup> and “All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered,”<sup>52</sup> which were granted legitimacy due to the fact that 193 states have agreed to abide by the charter, can the idea of universal agreements on “blame and crime” be introduced into the dialogue in a meaningful way.

Nuclear deterrence is not a universally applied and universally accepted concept. Sometimes, it is not enough. Israeli strategic culture does not allow for mutual assured destruction and will not consider itself safe in a nuclear dyad, even with both conventional and nuclear superiority. All it takes is one bomb on Tel-Aviv – Israel is

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<sup>50</sup> Walzer, Michael. *Just and Unjust Wars*. Basic, New York, 2006.

<sup>51</sup> Charter of the United Nations, Article 1, Point 1. URL: <http://www.un.org/en/documents/charter/chapter1.shtml>, accessed March 21, 2012.

<sup>52</sup> Charter of the United Nations, Article 2, Point 2., *Ibid.*



faced with an existential threat and will act to remove this threat.<sup>53</sup> The Iranian-Israeli situation thus, inasmuch as nuclear deterrence is considered, is very different from the ‘stable’ nuclear dyads of the US-USSR and India-Pakistan. Further horizontal proliferation may lead to Israeli-Iranian nuclear dyads that will result in certain chaos and destruction. Previous Israeli strikes during Operation Opera on the Osirak reactor reinforce this concept.

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<sup>53</sup> “The Bomb and the Bomber”, *The New York Times*, URL:  
[http://www.nytimes.com/2012/03/22/opinion/the-bomb-and-the-bomber.html?\\_r=1](http://www.nytimes.com/2012/03/22/opinion/the-bomb-and-the-bomber.html?_r=1)

## **Chapter 5: Nuclear Weapon States and the Dilemma of Nuclear Weapons**

The case for global zero is further reinforced not just by international organizations' call for a nuclear weapons free world, but by states as well. States, in the end, hold control over nuclear weapons – they are the ones with whom the ultimate decisions rest. Thus even if the United Nations and NATO both call for 'global zero', these statements must be backed up by political will of the party states.<sup>54</sup> The three countries with the highest number of similar statements are then an ideal starting point to examining the potential for a world without nuclear weapons. All three of these states acquired and maintained nuclear weapons for a mix of different reasons: a combination of status, national security, or leader psychology. Through examining these states reasons for acquiring nuclear weapons, it is possible to assess what steps have to be taken for these states to give them up. In general, there are four reasons why states acquire or seek to acquire nuclear weapons: state security, status, domestic political dynamics, and leader profile.<sup>55</sup> While all four are interlinked, the way a state approaches its nuclear arsenal and its security relations stems from their strategic culture. China, France, and the US exhibit

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<sup>54</sup> UN Secretary Generals have in the past issued multiple statements in accordance with this principle and the latest NATO Strategic Concept put forward in Lisbon in 2010 commits the Alliance to pursuing a world without nuclear weapons.

<sup>55</sup> Sagan, Scott. "Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb", *International Security*, Vol. 21, No. 3. (Winter, 1996-1997), pp. 54-86.

very different strategic cultures and have very different reasons for acquiring nuclear weapons. By examining these states nuclear arsenals and reasons for acquiring them, the required steps on the road to zero can be elucidated.

Political statements that advocate for nuclear drawdowns are not directly proportional to the states' following through on their reductions. Through three state actors the link between "rhetoric" – political statements that emulate a nuclear weapons free world - and actual reductions is examined. The examples of France, China, and the US, clearly show that uniform causality between the two does not exist. The three cases present the following data:

- French case: recent rhetoric, recent moderate nuclear drawdown
- Chinese case: constant rhetoric, no shift
- US case: Alternating rhetoric with recent increase, gradual decrease in weapons.

Thus there exists a nuclear dilemma with regards to rhetoric and nuclear drawdowns. Yet the dilemma is not universal; each actor faces different ideological goals and different perceived geo-strategic realities. These actors have set their numbers to levels their own unique situation warrants, in their perception. Through these three examples, it will become evident that "effective" deterrence is a concept relative to the policy making elite and the time, and minimal deterrence is also a construct. Thus, with time, minimal deterrence can be re-interpreted, especially in an international security environment that exhibits different characteristics. Deterrence already has been changed:

“Strategic nuclear deterrence is becoming far more complex than in the ‘first’ age. During the Cold War, the United States and its allies developed elaborate nuclear deterrence doctrines against a Soviet regime that turned out to be essentially conservative, stable, and unlikely to disrupt the status quo. After a short interlude in the 1990s, however, the world entered what Colin Gray has called ‘the second nuclear age,’ characterized by the original nuclear powers plus emerging states that either now have, or likely soon will have, nuclear weapons. Not all of them are stable, which poses serious questions for allied policymakers regarding how they will respond to proliferated nuclear threats, particularly with regard to deterrence strategies.”<sup>56</sup>

Finally, through these three countries, their relative prospect to ascribing to Global Zero is visited.

These three examples serve to show that achieving minimal deterrence is feasible. France presents a textbook case of how political statements can be followed up by nuclear drawdowns. Yet even in France’s case, getting to zero today is unlikely. In effect, as made evident by the White Paper of 2008, France faces a dilemma: first, French leadership realizes that a stable nuclear deterrent must be maintained in a world with nuclear weapons but also is very much devoted to a world without nuclear weapons and the road to global zero. The People’s Republic of China’s current nuclear reserves of 240 warheads with 176 deployed is nothing more than a strategic deterrent. Chinese Nuclear Policy is currently best described as “purely defensive in nature.” With such a limited arsenal, China cannot hope to use affirmative nuclear diplomacy to coerce other nuclear states to do its bidding, and its nuclear forces ascribe to “minimal deterrence”. With regards to the United States, President Obama’s famous declaration in Prague, in 2009: “So today, I state clearly and with conviction America's commitment to seek the peace

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<sup>56</sup> “The Proliferation of Weapons of Mass Destruction”, in Global Strategic Assessment 2009, Institute for National Strategic Studies, p. 166.

and security of a world without nuclear weapons ” are the clearest indication that the current administration takes the matter of nuclear weapons very seriously. So far, the drawdowns have been effective but not close to a nuclear free world – yet the US is on the path to achieving “minimal deterrence” as well.

These three countries show that the problem of nuclear weapons cannot and will not be solved in the near future. The current problems of deterrence and prestige associated with nuclear weapons inhibit states from relinquishing their nuclear weapons. This change can only come through gradual, generational shifts, in which each generation will have an altered concept of strategic culture and thus, of deterrence, of the likelihood of nuclear attacks against them, and of the potential dangers posed by nuclear weapons and their cost. France, US, and China’s recent nuclear history will show that there already has been a generational shift in the concept of deterrence where the US has gone and France and China has not attempted to surpass the limits of “minimal nuclear deterrence”. This gradual shift, along with political statements, will lead the way in achieving the first few generational phases needed for global zero.

#### *France and Compliance to a Changing International Environment*

Perhaps France is the sole country whose nuclear arsenal cannot be justified solely by state security reasons. The justification for the nuclear arsenal resides mostly with prestige and leader psychology reasons. France’s development of nuclear weapons is a clear sign of French aspiration to great power status after two devastating world wars. NATO’s and US commitment to the French Republic are evident from their coming to the

aid of France during both World Wars. Thus, the extended nuclear deterrence of the US and NATOs “attack on one, attack on all” principle provide sufficient deterrence from a strictly state security perspective. France acquired nuclear weapons for a different reason: the leaders’ psychology and their interpretation of status and prestige. As Prime Minister Mendes-France put it: “I fought for the right to the atomic bomb because it was intolerable that France suffer discriminatory treatment by the Americans and English and find itself reduced to the rank of Germany. My idea was to keep the bomb as a negotiating tool.”<sup>57</sup>

Currently, French nuclear forces are an independent nuclear deterrent, subject to the sovereign rule of France. While modest when compared to Russian or US numbers, France’s *force de frappe* (literally strike force) is the third largest nuclear arsenal in the world today. France is also a member of NATO, but France’s history with the North Atlantic Treaty Organization is not without hiccups (withdrawal from integrated command, re-locating NATO HQ to Belgium), yet its role as part of the Alliance is not to be taken lightly. Even more so, France is one of two nuclear powers within the EU (the other being the United Kingdom), and a permanent member on the Security Council of the United Nations, and also one of the five recognized nuclear powers within the Nuclear Non-Proliferation Treaty. France’s role thus is crucial both with regards to Global Zero and within the concept of European Defense. In fact, France, a founding member of the EEC, was the first to initiate a more profound debate of European Defense, at the conference of St. Malo – the initial focal point to which most experts

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<sup>57</sup> Hymans, Jacques E.C. *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy*. Cambridge, Cambridge, 2006. P. 102.

revert back to whenever conceptual debates about the Common Foreign and Defense Policy or the European Security and Defense Policy arise. Thus it is clear that France, without wanting to, will be a key player in the future not only in the shaping of the Common Security and Defense Policy of the European Union, but also of the Global Zero movement vis-à-vis the European Union.<sup>58</sup> While the New START Treaty only limits the nuclear warheads to 1550 per country, well beyond France's levels, whose current nuclear forces - as estimated by the Stockholm International Peace Research Institute - are at 290 deployed warheads and 10 other warheads, for a total of 300 warheads,<sup>59</sup> and even below Global Zero's new call of 1000 warheads endorsed by publicists at the New York Times,<sup>60</sup> it is highly probable, if the rate of change remains the same, that the cuts will reach France's arsenal within the foreseeable future.

France's nuclear history can be described as a trip from nationalism to international cooperation. These two concepts portrayed markedly different paths in France's nuclear desires and actions. During France's nationalist phase, France developed nuclear weapons, tested them, and increased its national nuclear arsenal. During international cooperation phase, France has worked on reducing the nuclear threat through cooperation with other countries. In the initial phase of nationalistic tendencies,

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<sup>58</sup> The Global Zero movement, which plans a phased reductions in nuclear weapons to establish a nuclear weapons free world, has high level signatories ranging from former President Jimmy Carter through former Soviet Premier Mikhail Gorbachev to Prime Minister Yasuo Fukuda and President Frederik de Klerk of the Republic of South Africa. Their latest action plan as of February 2010 can be found at URL: [http://static.globalzero.org/files/docs/GZAP\\_6.0.pdf](http://static.globalzero.org/files/docs/GZAP_6.0.pdf)

<sup>59</sup> Stockholm International Peace Research Institute Yearbook 2011. URL: <http://www.sipri.org/yearbook/2011/07>, accessed November 1, 2011.

<sup>60</sup> NYT Editorial, published on Oct 30<sup>th</sup>, 2011. URL: <http://library.constantcontact.com/download/get/file/1103699411106-70/BloatedNuclearWeaponsBudget.pdf>, accessed Nov. 1<sup>st</sup>, 2011.

crises in identity drove the French to develop an independent nuclear deterrent. While most would argue that it was the Suez Canal Crisis of 1956 that drove the French to finally developing nuclear weapons that might just be a single part of the picture. During those stressful times, French identity was drawn into question with their territories future uncertain.<sup>61</sup> The Battle of Diên Biên Phu in 1954 left a permanent scar on French identity. While it is debated whether the French actually asked for United States nuclear intervention during the end days of that crisis, that the possibility even raised itself and was treated with some credibility gives rise to the assumption that France, especially De Gaulle's France, never again wanted to find itself in a position where France was dependent on others. France's spirit of independence is evident from French history, and while whether they would actually have used nuclear weapons in Diên Biên Phu is very much debatable, the argument still holds. France's loss of French colonies also exacerbated the loss of prestige and the desire to reclaim great power status. Thus the French *Force de Frappe* rose out of France's nationalism in a time when French identity was in crisis, starting with the French nuclear test in 1960 leading to France developing the third largest nuclear arsenal in the world, behind the United States and the Russian Federation, successor to the nuclear arsenal of the USSR.<sup>62</sup>

Post-de Gaulle France exhibits very different behavior. With increased European cooperation, France underwent significant changes in nuclear policy. While Michael Levi and Michael O'Hanlon argue that France "remains content with maintaining modest

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<sup>61</sup> Cirincione, Joseph; Wolfsthal, Jon. B; and Rajkumar, Miriam. *Deadly Arsenals: Tracking Weapons of Mass Destruction*, Brookings Institute Press, Washington, 2002., p. 168.

<sup>62</sup> Spector, Leonard S., "The Future of the Non-Proliferation Regime" in Larsen, Jeffrey, and Wirtz, James A (eds)., *Arms Control and Cooperative Security*, Lynne Rienner, Boulder, 2009. p. 115.



deterrents”<sup>63</sup>, in effect France has exhibited mature nuclear policy through multiple stages that show that France is willing to reduce its nuclear weapons. France’s reliance on nuclear weapons was dictated more as a deterrent force than as a means for compellance. There comes a marked shift in French nuclear policy in the 1990s due to two major international events: the collapse of the Soviet Union and the end of the Cold War, and the consolidation of the EU, specifically through the Helsinki Accords and the Petersberg Tasks. With the advent of these two events, France has embarked on reduction of nuclear forces as made evident by the following actions.<sup>64</sup>

Perhaps the most significant event on the road to international cooperation was the signing of the NPT and with it Article VI detailing global disarmament.<sup>65</sup> While France was not an original signatory party to the Nuclear Non-Proliferation Treaty and avoided the talks completely<sup>66</sup>, France did a role reversal later vis-à-vis the NPT. During the de Gaulle regime, France was furthering and strengthening French nuclear arsenal: first, the talks with Italy and Germany about nuclear cooperation were abruptly stopped<sup>67</sup>, second, France tested a nuclear weapon in 1960, and third, France became the third country to develop a nuclear Triad, with sea-, air-, and land-based weapons systems. Yet

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<sup>63</sup> Levi, Michael A., and O’Hanlon, Michael E., *The Future of Arms Control*, Brookings Institute Press, Washington, 2005, p. 23.

<sup>64</sup> Nuclear Threat Initiative, Country Nuclear Profile: France, URL: [http://www.nti.org/db/disarmament/country\\_france.html](http://www.nti.org/db/disarmament/country_france.html), accessed November 2, 2011.

<sup>65</sup> United State Department of State, Diplomacy in Action, Nuclear Non-Proliferation Treaty. URL: <http://www.state.gov/t/isn/trty/16281.htm>, accessed November 2, 2011.

<sup>66</sup> Cirincione, Joseph; Wolfsthal, Jon. B; and Rajkumar, Miriam. *Deadly Arsenals: Tracking Weapons of Mass Destruction*, Brookings Institute Press, Washington, 2002., p. 167

<sup>67</sup> *Ibid.*, p. 167.

in 1992, France signed the Nuclear Non-Proliferation Treaty, mainly due to two major causes: first, the USSR, the greatest danger to European Defense post-World War II, disintegrated, and second, the increase in speed of European Integration with the Treaties of Nice, Maastricht, and Lisbon. France thus became a responsible member of the nuclear community.

Not only did France sign treaties, France went on to actually decrease the French nuclear arsenal in response to the decrease of a need for a nuclear deterrent. After the end of the Cold War, France presumably disassembled 175 warheads associated with four systems removed from service. Along with this reduction, President Chirac's nuclear plans for 1997-2002 announced in February 1996 resulted in dismantling several weapon systems.<sup>68</sup> France has also reduced its nuclear arsenal by half in nearly 10 years,<sup>69</sup> which is the largest reduction in nuclear forces other than that of the United States and Russia. France also holds no nuclear weapons in reserve.<sup>70</sup> Along with the dismantling of a large amount of nuclear weapons, France has also ceased production of plutonium in 1992 and of HEU in 1996.<sup>71</sup> In much the same way, France has later decided to shut down facilities for fissile material production and the later on dismantle them.<sup>72</sup>

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<sup>68</sup> The Nuclear Non-Proliferation Treaty in Cirincione, Joseph; Wolfsthal, Jon. B; and Rajkumar, Miriam. *Deadly Arsenals: Tracking Weapons of Mass Destruction*, Brookings Institute Press, Washington, 2002., p. 372.

<sup>69</sup> Nuclear disarmament: France's practical commitment, Working paper submitted by France to the 2010 NPT Review Conference, 14 April 2010, URL: [www.reachingcriticalwill.org](http://www.reachingcriticalwill.org), accessed November 2, 2011.

<sup>70</sup> *Ibid.*

<sup>71</sup> Nuclear Threat Initiative, Country Nuclear Profile: France, URL: [http://www.nti.org/db/disarmament/country\\_france.html](http://www.nti.org/db/disarmament/country_france.html), accessed November 2, 2011.

<sup>72</sup> *Ibid.*

France's original nuclear arsenal was composed of three separate branches, much like that of the United States. France based its policy of dissuasion on a strategic triad: land-air-sea. This is by no means warranted from a security standpoint. The French nuclear triad tried to match the triad of the United States, the Soviet Union, and the United Kingdom. Yet French nuclear strategy relies mainly on submarines, where three out of the four are operational any given time. Each of the four nuclear submarines carries sixteen missiles with three sets of M45 missiles available to them, and at any time, only one or two submarines are on patrol in designated areas. France has thus in effect voluntarily reduced the number of its missile launching nuclear submarines in service by one third.<sup>73</sup> Along with the changes in submarine-launched nuclear weapons, France has also completely dismantled its ground-to-ground nuclear component, in effect showing that the triad is not needed for state security reasons and status can fall victim of budgetary considerations.<sup>74</sup> That alone is a major step in any country's road to nuclear reductions, as France's dismantling of the last *Hades* missiles took place in June of 1997.

France currently possesses the following two types of Nuclear Weapons:<sup>75</sup> the TN81, with a yield of 100 to 300 kilotons, and the TN75, with a yield of 100 kilotons. France is also in the process of developing two new types, the TNO (tête nucléaire oceanic) on M51 missiles, which are said to have a range of 6000 km and to be capable

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<sup>73</sup> Ibid.

<sup>74</sup> Nuclear disarmament: France's practical commitment, Working paper submitted by France to the 2010 NPT Review Conference, 14 April 2010, URL: [www.reachingcriticalwill.org](http://www.reachingcriticalwill.org), accessed November 2, 2011

<sup>75</sup> Commissariat à l'Energie Atomique et aux Energies Alternatives, Directions des applications militaires. URL: <http://www-dam.cea.fr/dynamique/accueil/accueil.asp>, accessed November 1<sup>st</sup>, 2011.

of carrying up to six warheads. The CEA plans to deliver the warheads in 2015; and the TNA (tête nucléaire aéroportée), carried by the ASMP-A will have a range of 500 km and will have "improved maneuverability" and enhanced accuracy". The CEA boasts that the TNA is the first warhead in the world whose safety and functioning have been demonstrated, not by actual nuclear tests, but with the help of a program of simulation.<sup>76</sup> These nuclear warheads are very much limited in scope, ranging in the kiloton yields instead of the devastating multiple megaton yields some Russian and US nuclear warheads are capable of. France's nuclear arsenal is very much secured, and while proliferation remains an issue,<sup>77</sup> France's primary concerns are the strategic use of nuclear weapons and not nuclear terrorism with French nuclear bombs.

As put forth by *The French White Paper on Defence and National Security*, France faces multiple challenges that concern French nuclear forces, especially in a future with nuclear drawdown and even perhaps a nuclear weapons free world. In effect, as made evident by the White Paper of 2008, France faces, much as the United States or NATO, a dilemma: a stable nuclear deterrent must be maintained in a world with nuclear weapons -

"Nuclear deterrence remains an essential concept of national security. It is the ultimate guarantee of the security and independence of France. The sole purpose of the nuclear deterrent is to prevent any State-originating aggression against the vital interests of the nation wherever it may come from and in whatever shape or form. Given the diversity of situations to which France might be confronted in an age of globalisation, the credibility of the deterrent is based on the ability to

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<sup>76</sup> Ibid.

<sup>77</sup> "France is particularly active in the fight against the proliferation of chemical, biological and nuclear weapons as well as the delivery missiles." *French White Paper on Defence and National Security*, June 2008, from Council on Foreign Relations, URL: <http://www.cfr.org/france/french-white-paper-defence-national-security/p16615>, accessed November 5<sup>th</sup>, 2011.

provide the President, with an autonomous and sufficiently wide and diversified range of assets and options.<sup>78</sup>”

France also is very much devoted to a world without nuclear weapons and the road to Global Zero:

“France will have the means to develop its capability as long as nuclear weapons are necessary for its security. However, France has taken the initiative in the area of nuclear disarmament and shall continue to do so. France is particularly active in the fight against the proliferation of chemical, biological and nuclear weapons as well as the delivery missiles.”<sup>79</sup>

These challenges are not besetting France alone. This dilemma of working to maintain a stable nuclear deterrent when others have nuclear weapons, but trying to be on the forefront of reducing and later eliminating nuclear weapons is an issue besetting all states who advocate for zero. France is only a reluctant advocate for a world without nuclear weapons –French strategic culture, as outlined above, finds a major source of pride and prestige from its nuclear arsenal. Yet when the offer to extend French nuclear umbrella to the rest of Europe fell on deaf ears, France has shifted course. Potentially, France could gain just as much international recognition from leading the world without nuclear weapons and being at a forefront of this regime. The road to zero for a state who has nuclear weapons for prestige and status reasons is to change the status of nuclear weapons. Instead of nuclear weapons signifying great power status and a seat as a Permanent Member of the United Nations Security Council, nuclear weapons must be viewed by the international community as an abomination, and those states possessing

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<sup>78</sup> *French White Paper on Defence and National Security*, June 2008, from Council on Foreign Relations, URL: <http://www.cfr.org/france/french-white-paper-defence-national-security/p16615>, accessed November 5<sup>th</sup>, 2011.

<sup>79</sup> *Ibid.*

them must be regarded as pariahs. If this becomes the case, status-based nuclear arsenals would lose their benefits, and as the example of France shows, could be eliminated.

*People's Republic of China, No First Use, and Minimal Deterrence*

Chinese strategic culture exhibits a duality that has great potential for the global zero movement. China's pragmatist strategy will potentially look to find breakout options from any global zero regime, but the political leadership has stated on multiple occasions that they regard nuclear weapons as inhumane. There is no reason to accept these commitments at face value, so for China to be part of this regime, the cost-benefit analysis must be in China's favor. China is an ideal example for an excellent candidate for the future of the nuclear weapons abolishment movement. The China Defense White Paper 2006 is critical in understanding the road to zero: *Its fundamental goal is to deter other countries from using or threatening to use nuclear weapons against China.* Thus China already exhibits the needed clauses for future reductions – it relies on minimal deterrence and posits that its nuclear force is deterrence only against other nuclear weapons.

This stance is key for the future of the nuclear global zero regime. If nuclear weapons serve solely as an anti-nuclear deterrent, then nuclear drawdown becomes an acceptable goal. In today's security environment, where states face constrained budgets, efficiency in defense spending is paramount. Strategy dictates that resources be allocated in the most efficient way, and if ten can achieve the same effect, there is no need for three hundred. Smaller nuclear arsenals are easier and cheaper to maintain, but each nuclear

warhead becomes more “valuable” if lost. Thus past a certain number, only multilateral quasi-simultaneous drawdowns are feasible to avoid any comparative advantages for states. If, on the other hand, nuclear weapons serve potential offensive purposes or serve as deterrent for other type of WMD attacks or even conventional ones, nuclear drawdowns become highly complicated and less likely. Thus Russian war strategies with nuclear strikes followed by conventional attacks are a major stumbling block on the road to zero, and have to be addressed before further drawdowns are possible. In much the same way, through the example of the US, the problems of using a nuclear deterrent for other type of attacks is addressed. The Chinese case serves as an example of how even a state facing multiple security constraints can keep its nuclear arsenal for the sole purpose of deterring nuclear attacks.

The People’s Republic of China first tested a nuclear weapon on October 16, 1964, becoming the fifth nuclear power in the world and the final United Nations Security Council member (and later NPT Nuclear Weapons State) to do so<sup>80</sup>.

Immediately after the test, China issues a communiqué:

“[China] proposes to the governments of the world that a summit conference of all the countries of the world be convened to discuss the question of the complete prohibition and thorough destruction of the nuclear weapons, and that as the first step, the summit conference conclude an agreement to the effect that the nuclear powers and those countries which may soon become nuclear powers undertake not to use nuclear weapons either against non-nuclear countries and nuclear-free zones or against each other. *We are convinced that man, who creates nuclear weapons, will certainly be able to eliminate them.*”<sup>81</sup>

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<sup>80</sup> China Nuclear Profile, *Nuclear Threat Initiative*, URL: <http://www.nti.org/country-profiles/china/>. Accessed April 1, 2012.

<sup>81</sup> The Government of the People’s Republic of China, Statement of the Government of the People’s Republic of China, October 16, 1964., taken from Nuclear Threat Initiative, <http://www.nti.org/db/china/engdocs/nucsta64.htm>, accessed March 4, 2011. (emphasis mine).

The Chinese high command since then has not issued a countermand to this proposition. The current nuclear policy of China on this subject can be traced back to this first proposition – yet with the grand changes that the world has undergone is it in the long-term strategic interest of China to pursue this goal? With the culmination of the global zero movement into the Global Zero campaign, China must re-assess strategic interests in light of these new developments.<sup>82</sup> The larger, and perhaps more prominent question, of nuclear terrorism and dirty bombs must also be considered. With an unknowable portion of former Soviet weapons unaccounted for, China’s interests versus nuclear terrorism are complex and may not necessarily coincide with strategic nuclear interests.

Their current nuclear reserves of 240 warheads with 176 deployed are nothing more than a strategic deterrent. In effect, China ascribes to a minimal deterrence policy as described by Herman Kahn in his book on nuclear war, *Thinking about the Unthinkable in the 1980s*. Kahn states that in a minimal deterrence position,

“one does not need many nuclear weapons to deter a nuclear-armed opponent. Only a minimal nuclear retaliatory capability is required, since the overwhelming damage that could be wreaked by even a few nuclear weapon detonations could be enough to make any enemy calculations of surviving a war very questionable.”<sup>83</sup>

China can sustain a first strike and have sufficient return capabilities to cause significant damage to major cities of the attacking nation-state. China currently ascribes to one major nuclear policy: to retaliate following a nuclear attack. Because Beijing’s

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<sup>82</sup> Global Zero Movement, URL: <http://www.globalzero.org/>, accessed March 26<sup>th</sup>, 2012.

<sup>83</sup> Kahn, Herman. *Thinking about the Unthinkable in the 1980’s*. Simon and Schuster, New York, 1984. , p. 42.



sole nuclear mission is to retaliate against cities, known as a “counter-value missions”, it hopes that its nuclear stockpile is large enough to deter any possible attackers from attempting a strike. Chinese Nuclear Policy is currently best described as “purely defensive in nature.” With such a limited arsenal, China cannot hope to use affirmative nuclear diplomacy to coerce other nuclear states to do its bidding. China has also vowed not to use nuclear weapons against non-nuclear powers. Yet perhaps China’s greatest commitment, if taken at face value, is Chinese No First Use policy<sup>84</sup>. As China ascribes to No-First-Use policy, it claims that Chinese nuclear forces can only be used as retaliation for an attack by nuclear weapons. While whether China will actually follow this policy is up for debate, so far there are no realistic scenarios where China would gain an advantage from using part of its current nuclear warheads as an offensive weapon. Ascription to No-First-Use is a crucial element to the pursuit of a road to zero. This concept of publicly stating and accepting that nuclear forces only exist to deter other nuclear attacks is essential to furthering the cause of global zero, as it bounds the problem to a manageable situation.

China’s Nuclear Arsenal also acts as a strategic deterrent for emergency situations. It is small enough that it is non-threatening to the other Nuclear Powers – the 240 warheads would not play a major part in a possible thermonuclear war, but it is there if anytime in the future other foreign powers threaten Chinese sovereignty or the CCP’s supremacy, it is there as a strategic reserve to fall back on, most likely merely as deterrence, but still there. In effect, when China starts to consider relinquishing its

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<sup>84</sup> With only North Korea and India who also have official No-First-Use policies, this group is very select and worth future examination.

nuclear capabilities, there are three major and three minor issues to consider at this time. Very likely two of the minor ones can and will evolve into major ones over the next two decades, but at this point they are still to be classified as minor.

China is in a unique position when it comes to members of the nuclear Club. China holds infamous record of having the most nuclear neighbors: four. By comparison, the second places in this ranking have only two. While geographic proximity is not one of the main factors when calculating for nuclear exchanges, the importance of it cannot be ignored. Nuclear capabilities are measured in two distinct ways – first, the strength and devastative power of the nuclear warheads and second, the capability of delivering these warheads. The usual reason why proximity is not part of the traditional calculation is that the two superpowers in the arms race were separated by an ocean and a continent. Yet the effects of proximity must enter into Chinese calculations. It takes less effort to develop a missile that only has to go a few miles to hit Chinese soil than it does to travel thousands of miles. China has three of the newest nuclear members as neighbors, India, Pakistan, and North Korea, who, without advanced missile technology do not pose a threat to other nuclear countries but may do so for China.

At this point, while major thermonuclear war is unlikely, China's nuclear arsenal keeps an additional player involved in the equilibrium. During the bi-polar nuclear world of the Cold War, the level of nuclear tension was constantly mounting as the two superpowers increased their nuclear arsenals at a growing rate. The issue then was global thermonuclear war initiated by and between the US and USSR, which is no longer the case. While nuclear war was averted, military strategists were able to develop scenario

plans with only two players – and the possibility of strategic gain where only one enemy or opponent is involved is much greater than when one has to deal with multiple foes all with nuclear capabilities. It is arguable that more nuclear capabilities increase the risk of someone initiating conflict, thus the deterring factor of the increased possibilities make for a strategically sounder no-first-use policy to limit nuclear responses to nuclear attacks. Not one of the countries would dare to risk being in a position that after an initial attack they would be left defenseless against not only retaliation but opportunistic attacks as well.

While it may be obvious, it is not in China's interest to engage in a major international nuclear conflict. Even if in an unlikely and very improbable situation that China would emerge as a clear victor in nuclear conflict, as one of the war fighting scenarios of Herman Kahn outlines, in this scenario China would still be worse off in absolute terms than it is now. While the strategic state-level implications show that China cannot at this point adhere to a Global Zero policy, China by no means can be satisfied with a MAD (mutual assured destruction) policy that a world with high levels of nuclear weapons shows.

China is in a perilously weak position if a nuclear exchange would happen between any two nuclear states. China's strategic reserves are dangerously low if any all-out nuclear conflict would ensue. China so far has spent a smaller amount of resources on nuclear weapons. To equalize the distribution discrepancy between China and the other members of the nuclear club, China could also increase its nuclear arsenal to a major level. Or, alternatively, China could persuade the other nuclear powers to reduce their

arsenal to a smaller level. In this aspect, China has a vested interest in ascribing to a campaign that would resemble Global Zero in essence.

Nuclear capable states are those that have the possible capability but have not developed nuclear weapons. This category can and will expand significantly if nuclear energy becomes a viable alternative for fossil fuels, or if energy scarcity becomes a more pressing issue. Currently, China has to focus on two countries that have the capability and play a major part of Chinese strategic interests: Iran and Japan. Chinese policy towards Iran should be exactly what China has been doing as a member of the Comprehensive Test Ban Treaty and the Non-Proliferation Treaty; Iran should not be allowed to develop nuclear weapons. Japan, as a historical competitor of China, has to be considered differently. While the Japanese have renounced war as a means of settling international disputes and currently have a very limited standing army, their leadership is tenuous at best with governments changing too often for China to be able to count on Japan as a reliable neighbor. In effect, a statement by a high level Japanese official can be interpreted as a warning sign that Japan might be considering developing nuclear weapons. Tokyo Governor Shintaro Ishihara, calling for Japan to develop a nuclear deterrent in response to evolving regional threat, said that: “All our enemies: China, North Korea and Russia -- all close neighbors -- have nuclear weapons. Is there another country in the world in a similar situation?”

While not in direct collision course with either non-nuclear states, which are those that fit in neither nuclear nor non-nuclear categories, China must consider the implications Chinese actions have on these states. First, further Chinese development and

aggrandizement of its nuclear arsenal will be seen as a threatening move for these states. Second, a plausible renunciation of nuclear weapons would increase these states potential ties with China. China's African interests would be best served if China maintained a course that portrayed Beijing in a light of a responsible member of the international community. It is, on the other hand, in China's strategic interest to avoid a thermonuclear war. The possibility of nuclear weapons becoming irrelevant rests on not finding these weapons as there are more than adequate ways to hide launch capabilities either in submarines or bases, but in being able to avert and neutralize the missiles before impact.

#### *United States and Global Zero: Shifting Norms and Realities*

The United States is perhaps the best example of how normative goals interact with strategic realities in a single policy making elite. The United States reasoning to acquire and maintain nuclear weapons are perhaps most complex with novelty, scientific progress, and superpower status as driving forces in the initial stages and state security contributing to the subsequent buildup, but the position that the United States holds in the current security environment enables it to shape it effectively. The Obama Administration is a key piece to furthering global zero. As President Obama stated in Prague: "And as nuclear power – as a nuclear power, as the only nuclear power to have used a nuclear weapon, the United States has a moral responsibility to act. We cannot succeed in this endeavor alone, but we can lead it, we can start it."<sup>85</sup> Others would agree with this. Reiss

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<sup>85</sup> Obama's 2009 Prague Speech, [http://www.whitehouse.gov/the\\_press\\_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered](http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered)

points out in *Nuclear Tipping Point* that “Washington’s leadership of the non-proliferation regime and its efforts to prevent the spread of nuclear weapons will be critical for success.”<sup>86</sup>

Significantly, this is the same meaning assigned to the term in official documents issued by the Clinton administration. President Clinton issued Executive Order 12938 (“Proliferation of Weapons of Mass Destruction”) on November 12, 1994, which stated: the proliferation of nuclear, biological, and chemical weapons (“weapons of mass destruction”) and of the means of delivering such weapons, constitutes an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States, and hereby declare a national emergency to deal with that threat. In Reykjavik and with Ronald Reagan’s presidency, the United States came close to eliminating the threat of nuclear weapons. With the Soviet acquisition of the bomb, the words *global thermonuclear war* were not mere propaganda, and the term Mutual Assured Destruction, mad as it was, became real. US policy makers were very aware of this reality and were also intent on coming up with solutions to it. As John F. Kennedy put it: “Every man, woman and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads, capable of being cut at any moment by accident, or miscalculation, or by madness. The weapons of war must be abolished before they abolish us.”

While more and more rhetoric is surfacing on part of the Permanent Members of the Security Council of the United Nations<sup>87</sup> that they would be willing to give up nuclear

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<sup>86</sup> Reiss, Mitchell B. “The Nuclear Tipping Point” in Campbell, Kurt M., Einhorn, Robert J., and Reiss, Mitchell B. (eds) *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*. Brookings, Washington DC, 2004., p. 16.

weapons if others would do so, the only action currently being implemented is the bilateral reductions in strategic nuclear weapons between the US and Russia, as a leftover project from the Cold War. The New START Treaty currently in progress builds on previous treaties, such as SALT I, SALT II, and START I. President Obama's famous declaration in Prague, in 2009: "So today, I state clearly and with conviction America's commitment to seek the peace and security of a world without nuclear weapons"<sup>88</sup> are the clearest indication that the current administration take the matter of nuclear weapons very seriously.

The strategic culture of the United States is the key to any action on the route to a world without nuclear weapons. The United States exhibits a certain duality in its approach to foreign affairs, eloquently elicited by Walter MacDougall. MacDougall argues that the foreign policy of the United States has always been an apparent contradiction between idealism and realism.<sup>89</sup> To achieve the goal of global zero, a responsible state needs to be found who can believe *idealistically* in the safeguarding of mankind all the while maintaining a *realist* approach to how such a grand scheme can be carried out without other, less idealistic countries, gaining a strategic advantage. The United States fits this description perfectly. As Obama's speech further states: "First, the United States will take concrete steps towards a world without nuclear weapons. To put an end to Cold

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<sup>87</sup> United States, Russia, France, United Kingdom, and the People's Republic of China.

<sup>88</sup> President Barack Obama, speech delivered in Prague, Czech Republic, on April 5<sup>th</sup>, 2009. [http://www.whitehouse.gov/the\\_press\\_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered](http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered)

<sup>89</sup> MacDougall, Walter A. *Promised Land, Crusader State: The American Encounter with the World Since 1776*. Houghton Wifflin, New York, 1997.

War thinking, we will reduce the role of nuclear weapons in our national security strategy, and urge others to do the same.”<sup>90</sup> Thus it is clear that “ideologically” the United States is very much committed to reducing this risk, and the risk is very real. Yet Obama goes on to prove that the US is just as much a realist: “As long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense to our allies.”<sup>91</sup>

To illustrate the fact that the world has changed one need look no further than the largest attack the United States has had in the last century. It was not in any land based battle or sea conflict, nor in a nuclear exchange between superpowers, but an attack carried out by a few select individuals with proper training and adequate resources. The terrorist attacks against the twin towers of the World Trade Center changed the scope of conflict forever. Such a massive scale attack led to the re-organization of United States national security protocol, led to the introduction of the Patriot Act and President Bush declaring a global war on terror.<sup>92</sup>

The world of warfare has changed substantively. The United States no longer faces a single conventional army that the military has to be prepared to fight. The U.S. no longer has a near-peer competitor in military matters and instead of focusing on a

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<sup>90</sup> President Barack Obama, 2009 Prague Speech, [http://www.whitehouse.gov/the\\_press\\_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered](http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered)

<sup>91</sup> *Ibid*,

<sup>92</sup> *The 9/11 Commission's Report: Final Report of the National Commission on Terrorist Attacks Upon the United States*. Norton, New York, 2004.



possible World War III, the United States should re-assess its military needs.<sup>93</sup> China, the rising superpower, would agree. Deng Xiaoping concluded in 1982 “that the world was tending toward peace and development, [and that] the possibility of a world war was remote”<sup>94</sup> but also send a strong signal to future transnational terrorist originations by striking down hard on Al Qaeda. Bruce Riedel also believes that Al Qaeda is most likely to produce a nuclear bomb from “their own back yard.”<sup>95</sup> As Osama Bin Laden has been killed by American Special Forces, the threat of retaliation looms on the horizon. As shown previously, it is unseemly to believe that America’s nuclear deterrent will stop any further terrorist attacks.

Three major issues present themselves when focusing on nuclear arsenals from a defensive standpoint for the United States. First, the strategic deterrent value they have in state-level conflict. Second, their retaliatory value in view of other WMDs and CBRN weapons. Third, their economic costs must be justified for them to be valid. The first, the issue was global thermonuclear war initiated by and between the US and USSR, which is no longer the case. While nuclear war was averted, military strategists were able to develop scenario plans with only two players – and the possibility of strategic gain where only one enemy or opponent is involved is much greater than when one has to deal with multiple foes all with nuclear capabilities. While it is arguable that more nuclear

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<sup>93</sup> Barnett, Thomas. *The Pentagon’s New Map: War and Peace in the Twenty-first Century*. Putnam’s Sons, New York, 2004. P. 108.

<sup>94</sup> Gill, Bates. *Rising Star: China’s New Security Strategy*. Brookings, Washington, 2007. P.3.

<sup>95</sup> “Pak’s nuclear bomb may fall into hands of terrorists”, *India Today Online*, <http://indiatoday.intoday.in/site/story/Pak's+nuclear+bomb+may+fall+into+hands+of+terrorists/1/1782.html>, accessed April 26<sup>th</sup>, 2011.

capabilities increase the risk of someone initiating conflict, in reality the deterring factor of the increased possibilities make for a strategically sounder no-first-use policy. Not one of the countries would dare to risk being in a position that after an initial attack they would be left defenseless against not only retaliation but opportunistic attacks as well.

During the Cold War, nuclear deterrence was a valid theory. With the United States strongly committed to the security of Europe in both the Organization of Security and Cooperation in Europe and more importantly in the North Atlantic Treaty Organization, the United States' had limited options to guarantee its commitments. The United States' commitments are articulated in the North Atlantic Treaty's Article 3 and 5. Article 3 of the Treaty provides that the allies "separately but jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual collective capacity to resist armed attack."<sup>96</sup> In Article 5, the parties agreed that "an armed attack against one or more of them in Europe and North America shall be considered an attack against them all."<sup>97</sup> At the end of World War II, the Soviet-US cooperation between Roosevelt and Joseph Stalin started to be put under pressure. The dynamic of the relationship has switched from co-operation against a common enemy to a competitive and hostile relationship. Under President Truman, the United States had to consider how best to deal with the Soviet Union.<sup>98</sup>

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<sup>96</sup> North Atlantic Treaty, *The Atlantic Charter*. Article 3. [http://www.nato.int/cps/en/SID-4D81FEC4-F22C6136/natolive/official\\_texts.htm?search=true&chunk=1&sortByfield=v\\_startDateSearch&order=asc&query=\\*&keywordquery=\\*&date\\_from=&date\\_to=](http://www.nato.int/cps/en/SID-4D81FEC4-F22C6136/natolive/official_texts.htm?search=true&chunk=1&sortByfield=v_startDateSearch&order=asc&query=*&keywordquery=*&date_from=&date_to=), Accessed May 7, 2011.

<sup>97</sup> *Ibid.*

<sup>98</sup> Sloan, Stanley R. *NATO, the European Union, and the Atlantic Community*. Rowman and Littlefield, Lanham, 2003. P. 5.

Yet the changes that have happened since the end of the Cold War are undeniable. The three traditional roles of nuclear weapons in US policy are: a foundational strategic nuclear deterrent, protecting the US itself from nuclear or survival-threatening threats; a nuclear umbrella for allied states; and third is a deterrent against strategic or operational threats from WMD at a regional level.<sup>99</sup> The first is no longer the case with the implosion of the Soviet Union. The second one might not be needed given the changes in the way US allies approach nuclear weapons and threats. The third may still be a credible option, but the potential costs may outweigh the benefits. Inasmuch as countering any of these threats, the Nuclear Posture Review of 2010 states that, for the US to enhance its national security, it should prevent the use of nuclear weapons, reduce their role in US National Security, and reduce their numbers to as few as possible.<sup>100</sup>

The United States nuclear arsenal is also the source of two major problems that might very likely upset the delicate balance of the international security environment: American nuclear primacy and Iranian nuclearization. The threat that Iran will become a nuclear power is made out to be a very likely one in current literature, with Iran being able to develop nuclear bomb capability any minute now. The Iranian leadership with Ahmadinejad and Ayatollah Khamenei has expressed their willingness to acquire these weapons. The only other power in the Middle East with nuclear capabilities, although unofficial, is Israel. Israel's unique position amidst its neighbors if not justifies, at least

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<sup>99</sup> Griffith, Lewis, and Campbell, Edwina. "Obama and the Path to Zero: Thrust and Vector versus Speed and Distance", working paper., p. 102.

<sup>100</sup> 2010 Nuclear Posture Review, US Department of Defense, URL: <http://www.defense.gov/npr/docs/2010%20nuclear%20posture%20review%20report.pdf>, accessed March 31, 2012.

explains Israel's nuclear wishes. Iran's reasoning to acquire nuclear weapons as defensive capabilities might be the start of a diabolical circle. If Israel acquired nuclear weapons to defend against the larger conventional force, and Iran now acquires nuclear weapons to defend against a plausible Israeli nuclear threat, Israel has to up the ante: if this circle starts, there is no telling where it will end up. Iranian nuclearization would be a major upset to the balance and the status quo of the Middle Eastern region. As recent events have shown, any upset in the Middle East affects the economic world significantly. While the world relies on oil as a prime energy source, the peace in the Middle East is of paramount importance to international security and economy. Finally, Iranian succession is tenuous at best, more correctly labeled as unpredictable with relatively little oversight onto the process and the successor. Power struggles within the country could lead to a leader with little-to-no regard for the sanctity of human life in the Western sense, someone who could conceive of the use of Nuclear Weapons to bring about either religious ideologies or a return of the Caliphate. Arguments can be made that if Iran develops enough nuclear strike capabilities to take out Israeli second-strike capabilities, it would pursue a stronger military campaign against the Israelis in accordance with the Arab world's policy in 1948. Iran consistently cites the US nuclear arsenal as a source of fear and justifies its actions only as defensive. Without a US nuclear arsenal, many other nuclear capable countries would lose this justification for their development of nuclear capabilities.

American nuclear primacy is also of major concern. History has shown that these fears associated with American nuclear supremacy did not come true, although the

situation might have changed substantially from the time when they were discredited.

The traditional argument, as put forward by Lieber and Press, stresses the importance of the possibilities of more aggressive foreign policy practiced by the United States. “The strategic nuclear balance has shifted dramatically since the end of the Cold War, and the United States now stands on the cusp of nuclear primacy.”<sup>101</sup> Lieber and Press also point out that “The implication is that in future high-stakes crises, U.S. leaders may consider initiating nuclear war just as they did in the past. And to avoid such circumstances, U.S. adversaries will work hard to mitigate their vulnerability.”<sup>102</sup>

More importantly, even though the US is the only country ever to have used atomic weapons that was a single incident when the capabilities of the weapons were untested in war and the argument justifying their use was to save more lives in a probable prolonged war. While the ‘qui custodet ipsos custodes’ argument is certainly valid, the US enjoyed nuclear monopoly until the Soviets acquired nuclear weapons and nuclear primacy until the 1960’s where Soviet missile technology became moderately reliable. Yet the US has not used nuclear weapons in any other way but as a strategic deterrent from Soviet aggression.

Finally, what the United States has to weigh carefully is put forth eloquently by Keith Payne in his article in the Air Force Strategic Studies Journal:

“The question is whether we are willing to accept the risk of deterrence failure on those occasions in which the United States could not threaten nuclear escalation, possibly including threats to some adversaries’ highly valued/protected targets. The

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<sup>101</sup> Lieber, Keir A., and Press, Daryl G. “The End of MAD? The Nuclear Dimension of U.S. Primacy”. *International Security*, Vol. 30, No. 4., p. 8.

<sup>102</sup> *Ibid.*, p. 37.

added risk of deterrence failure flowing from such an inability surely cannot be calculated a priori with precision. It may be nonexistent or high, depending on the specific circumstances of the contingency. Even if the risk of deterrence failure for this reason is low, however, the possibility would still deserve serious consideration because the consequences of a single failure to deter WMD attack could be measured in thousands to millions of US and allied casualties. And, of course, that risk may not be low.”<sup>103</sup>

Dunn Lewis argues that “past experience indicates that if a country’s leadership decides to pursue nuclear weapons, the Article II ‘no manufacture and no acquisition’ obligations will not be a significant constraint.”<sup>104</sup> Potter and Gaukhar would concur that the channels of control currently in place cannot achieve the goals set forth nor stop the proliferation process. They point out that:

“The overall record of proliferation prognoses by government intelligence analysts and political science scholars alike instills little confidence that the international community will receive early warning about emerging nuclear weapons threats. Repeatedly, both communities have failed to anticipate significant nuclear weapons developments in a timely fashion or, in some instances, have missed them altogether. Examples of proliferation surprises include the first Soviet and Indian nuclear explosions, the initiation and successful development of Israeli nuclear weapons, the timing of India’s second and Pakistan’s first nuclear tests, the rise and demise of Iraq’s nuclear activities, and the nature and scope of North Korea’s nuclear weapons ambitions.”<sup>105</sup>

Thus it is clear that the current state of the international security environment is not ready to follow up on their original desire to eliminate nuclear weapons and the United States must choose a different approach to global zero. As Levi and O’Hanlon

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<sup>103</sup> Payne, Keith B. “On Nuclear Deterrence and Assurance.” Air Force Strategic Studies Quarterly, Spring 2009, <http://www.au.af.mil/au/ssq/2009/Spring/payne.pdf>, accessed May 16, 2011. Accessed May 16, 2011, p. 54.

<sup>104</sup> Dunn, Lewis A. “THE NPT: Assessing the Past, Building the Future.” Nonproliferation Review, Vol. 16, No. 2, July 2009. P.6.

<sup>105</sup> Potter, William C., and Mukhatzhanova, Gaukhar. Divining Nuclear Intentions A Review Essay. International Security, Volume 33, Number 1, Summer 2008, pp. 139-169

state: “complete disarmament, is entirely unrealistic for the foreseeable future, given the security risks inherent in American denuclearization”<sup>106</sup> As Barack Obama so aptly stated, a nuclear free world might not happen in his lifetime, but it is time to start on the road. Even if all nuclear weapons cannot be eliminated due to strategic deterrent factors, the journey to zero would increase the security of the global community multifold. The United States is in a unique position to grant credibility to this initiative and the political capital to carry it through, either through diplomatic or economic means. Griffith and Campbell would argue that the “US policy breaks new ground in its effort to rebalance the three foundational nuclear roles so that the US nuclear posture itself enhances nuclear non-proliferation.”<sup>107</sup> They also outline that the process, even from US policy standpoint, will not be quick. Technical limits to disarmament and verification, along with multilateral negotiations, all add significant time delays to any agreement.<sup>108</sup>

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<sup>106</sup> Levi, Michael A., and O’Hanlon, Michael E., *The Future of Arms Control*, p 20.

<sup>107</sup> Griffith, Lewis, and Campbell, Edwina. “Obama and the Path to Zero: Thrust and Vector versus Speed and Distance”, working paper. p. 106.

<sup>108</sup> *Ibid.*, p. 108-109.

## Chapter 6: The Way Forward

### *Nuclear Drawdown and the Role of Global Zero*

The problems of nuclear weapons and the idea that they have to be eliminated from state level strategic planning dates back to the inception of the United Nations. In June of 1946, at Dumbarton Oaks, a plan to deal with the future of nuclear weapons was already introduced. The Baruch Plan, as introduced by US ambassador to the UN, Barnard Baruch, at the first session of the UN Atomic Energy Commission, called for the complete transfer of all US atomic weapons and facilities to an international organization – in this case the United Nations.<sup>109</sup> Given the fact that in 1946, only the United States had nuclear weapons (the Soviet Union did not successfully test until 1949), this called for international stewardship of nuclear weapons. More importantly, this plan called for the UN to have authority and use physical force to compel states to comply to this.<sup>110</sup> Yet this plan, even though it was subsequently introduced by the US to the UN Security Council for the following ten years, met zero success.<sup>111</sup> Thus perhaps the states themselves or an international organization made up of these states is unable to achieve

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<sup>109</sup> Larsen Jeffrey, and Wirtz, James. *Arms Control and Cooperative Security*. Lynne Rieder, Boulder, 2009, p. 98.

<sup>110</sup> *Ibid.*, p. 99.

<sup>111</sup> *Ibid.*, p. 100.



success in this crucial matter, but a smaller transnational advocacy group can, and Global Zero is well equipped to attempt the challenge.

Global Zero is a growing initiative that intends to eliminate all nuclear weapons in the world. Disarmament and non-proliferation are the two main pillars of Global Zero which then lead to a total nuclear relinquishment of all weapons. The campaign, started in December 2008, includes many high level signatories from multiple different venues of life. Notable signatories include: South African Frederik Willem de Klerk, German Helmut Schmidt, former USSR Premier Mikhail Gorbachev, and former US President Jimmy Carter. As shown with the changing realities in war, the world is no longer that of the Cold War or the immediate post-Cold War environment. This work states that although multiple other such networks exist calling for the abolishment of nuclear weapons, Global Zero's action plan is potentially most effective as a strategy for putting the world on a path of no nuclear weapons:

- based on their interpretation of nuclear weapons,
- the roles they assign to Nuclear Weapons States and the other players
- their proposed multinational strategic talks, and
- the educational and grass-roots actions they take.

Through their 4 Phased Action Plan with de-alerting, de-targeting, and later US-Russian bilateral talks, followed by multinational conferences are key to going further down this road.<sup>112</sup> Global Zero's action plan is perhaps the most effective and best thought out, yet even their Action Plan is too short-term for it to achieve lasting effects.

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<sup>112</sup> Global Zero Action Plan, February 2010.URL: [www.globalzero.org](http://www.globalzero.org), accessed March 22<sup>nd</sup>, 2012.

Global Zero's action plan also has problems with proliferation and verification, with current technology unable to provide for total overview. As Colby states in "Nuclear Abolition: A Dangerous Illusion" article, US conventional force superiority might not last forever, and thus, ironically, the greatest proponent of global zero might turn back to nuclear weapons.<sup>113</sup> In the same manner, Russian defense policy of the recent past has decided to rely more heavily on their Strategic Rocket Forces – thus Global Zero's Action Plan over here would also hit major obstacles in the near future. The reasons behind and the arguments against future retention of nuclear weapons have been outlined, both in general and with regards to specific countries. Global Zero's pitfalls to achieving their strategic goals can be remedied, as outlined in the last chapter of this work, *The Way Forward*. This work diverges from Global Zero's Action Plan and outlines an alternative method to address the problems of nuclear weapons and their inherent inhumane consequences to achieve a more stable world.

Furthermore, Global Zero does all it can to maintain the taboo on the "use" on nuclear weapons by grouping all 'low-yield' or other nuclear weapons under the same umbrella. This peril has been recognized before: as President Lyndon Johnson stated:

"Make no mistake. There is no such thing as a conventional nuclear weapon. For nineteen peril-filled years no nation has loosed the atom against on another. To do so now is a political decision of the highest order. And it would lead us down an uncertain path of blows and counterblows whose outcome none may know."<sup>114</sup>

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<sup>113</sup> Colby, Elbridge. "Nuclear Abolition: A Dangerous Illusion", *Orbis* 52, No. 3., 2008.

<sup>114</sup> *Public Papers of the President*, 1963-4, 2:1051, taken from Waltz, Kenneth A. and Art, Robert J. *The Use of Force*, Rowman, Lanham, 2004. P. 89.

Global Zero is well aware of this, and is currently pursuing the removal of US and Russian Tactical Nukes from European Combat bases, as outlined in their GZ NATO-Russia Commission Report.<sup>115</sup> Yet their strategic timeline is too short. Their terms for initiating a multilateral nuclear disarmament talks is 2012-2013, which is highly unrealistic. Global Zero wishes to proceed to quickly, and ignores the fact that strategic culture must first adapt to one reality before it can tackle the next. The way forward to a nuclear weapons free world must take this into account. Even Henry Kissinger, four years after calling for global abolishment of nuclear weapons, realized that the path has to be gradual with each stage meeting security criteria. He states in an op-ed with former National Security Adviser Scowcroft, that the “goal of future negotiations should be strategic stability and that lower numbers of weapons should be a consequence of strategic analysis, not an abstract preconceived determination.”<sup>116</sup>

Along with strategic state-level considerations, Global Zero also employs methods that show that it is ready to approach this problem in the long term – and if unable to achieve this with the current, leadership, Global Zero is indirectly working on altering the strategic culture of the policy makers of the future. With their aid and marketing of the movie *Countdown to Zero*, Global Zero is shifting their target audience from the current ‘children of the Cold War’ to the ‘children of globalization’. The following example is a reason Global Zero is best-equipped with long-term strategic

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<sup>115</sup> Global Zero NATO-Russia Commission Report Findings, URL: <http://www.globalzero.org/en/nato-russia-commission-report>, accessed April 2, 2012.

<sup>116</sup> Kissinger, Henry, and Scowcroft, Brent. “Nuclear weapon reductions must be part of strategic analysis”, Washington Post Online, URL: [http://www.washingtonpost.com/opinions/nuclear-weapon-reductions-must-be-part-of-strategic-analysis/2012/04/22/gIQAKG4iaT\\_story.html](http://www.washingtonpost.com/opinions/nuclear-weapon-reductions-must-be-part-of-strategic-analysis/2012/04/22/gIQAKG4iaT_story.html), accessed April 24<sup>th</sup>, 2012.

thought to achieve change. This campaign ad shows that Global Zero is not only aware of the economic cost associated with the retention of nuclear weapons, but uses them to show the potential trade-offs these costs would incur.

World leaders will spend \$1 trillion on nukes in the next 10 years  
while cutting essential services that we all need! Will you take  
1 minute to tell them what matters most to you

**SCHOOLS**

**SCHOOLS**

**1 NUKE = 400 COLLEGE SCHOLARSHIPS**

As budgets get squeezed, government has responded with tuition hikes, less financial aid and overcrowding in primary schools. The cost of 1 nuke could fund 400 scholarships, and the U.S. has over 8,000 nukes!<sup>117</sup>

These types of programs, along with the creation Global Zero chapters in universities and colleges, sponsoring workshops and conferences, to have the population, the electorate, call on change from below. This approach works best for democratic or polyarchic societies, yet it can also apply to non-democratic ones. The pressure encountered would not come from direct voting but from the population through indirect means. The ruling elite then would have to weigh yielding to both internal and external pressures.

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<sup>117</sup> Global Zero Movement, [www.globalzero.org](http://www.globalzero.org), accessed April 2, 2012.

### *Generational and Long-term Change*

As outlined above, nuclear weapons do pose significant dangers to society. Global thermonuclear war, although low in probability, is highly cataclysmic, and even limited nuclear exchanges are catastrophic beyond anything witnessed in the history of human conflict. Yet state and national security, as shown by the examples of France, US, and China, warrants their existence. The downsides of nuclear arsenals are varied and significant. Non-state actors acquisition of nuclear weapons is perhaps the largest threat, as deterrence fails with them. Proliferation also poses major challenges to maintaining stable nuclear relations. Accidents and mismanagement of nuclear stockpiles are two crucial reasons why further thought has to be given to the possible elimination of nuclear weapons. Equally important is the taboo on the use of nuclear weapons, as put forth by Nina Tannenwald.<sup>118</sup> This taboo on the use does exist, and should be maintained lest the lines blur between strategic nuclear weapons and smaller, lower yield explosions. The problem is clear: first, states must be able to maintain deterrence in what they perceive to be a stable way, yet the inherent dangers of nuclear weapons do require action. Inasmuch as deterrence is considered, it is just as much a strategic reality as it is a construct, as made evident by how different policy makers approach it. The key thing with nuclear weapons is that they are in fact under civilian control and not just another tool of the military. What most advocacy groups fail to recognize is that outlining a single-step solution is thus currently infeasible. Instead, they – and in this specific case, Global Zero,

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<sup>118</sup> Tannenwald, Nina. *The Nuclear Taboo*. Cambridge, New York, 2007.

as it is the best suited to do this and has the structure already in place – should focus on approaching the problem more in the long-term.

The argument to attempt to abolish nuclear weapons immediately has too many constraints in the current security environment to be feasible now. Yet the dangers are present and warrant action. The road to global zero thus has to be a slow and steady one, not with multiple phases, but with sequential Stages – each with a clear strategic objective, that, once achieved, must be accepted as the new norm of the international community for the next stage to be able to be initiated. For these new norms to become the status quo time must pass. This work posits that at least one generation must pass since the adoption of the old stage and the implementation of the new (as substantiated by the shift from the Cold War Generation to the Post-Cold War Generation’s strategic thought), but the time may vary and with new challenges arising, it may be lengthened or shortened. There are two other major considerations that all nuclear weapons states have to work on achieving relatively quickly: the Fissile Material Cut-off Treaty and the Comprehensive Test Ban Treaty.

The FMCT is essential in limiting horizontal proliferation and while not quintessential to progress, it does pose major benefits to the non-proliferation regime. Some authors, such as Amitai Etzioni, conclude that the FMCT would have to come into effect before disarmament can progress forward,<sup>119</sup> and as such, he believes that positive incentives can work to have states with high terrorism risk (Pakistan and Iran) renounce

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<sup>119</sup> Etzioni, Amitai, “Deproliferation: An Approach to Preventing Nuclear Terrorism”, *The Bulletin of Atomic Scientists*, July 23, 2008.

their nuclear programs. While commendable, the problem with this approach is that Pakistani state security, the survival of their regime in Pakistani strategic culture, depends on nuclear weapons.

When asked to renounce their nuclear weapons program, Pakistani government officials first will point to Delhi's nuclear warheads, then point out US hypocrisy towards their commitment to the Nuclear Non-proliferation Treaty, and third will posit that they are responsible and mature members of the International Community who have not used nuclear weapons even when clashing with India. The Pakistani nuclear weapon was a response to the Indian bomb. The proximity of Islamabad to Delhi, the permanent conflicting tension and the difference in strategic cultures all lead to it being infeasible that one state would give up their nuclear weapons when the other has them. Western logical reasoning in expanding on the possibility of Pakistani bombs ending up in terrorist hands is lost on Pakistani leadership.<sup>120</sup> Their three conflicts with India, Pakistani leadership posit and not without merit, that they can secure their nuclear weapons even during conflict and can handle them with gravitas.

Thus Etzioni's FMCT pre-dating disarmament regimes is most likely infeasible. Instead, the FMCT treaty should be pursued conjointly to disarmament treaties, as an additional and alternative method of securing nuclear material and limiting non-state actor acquisition, all the while working on a state-level solution to proliferation through a nuclear weapons convention. The key aspect of the Fissile Material Cut-off Treaty would

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<sup>120</sup> Private conversation with Dr. Pervez Hoodbhoy during Global Zero Conference, Washington, DC, May 2011.

be its effects on states' nuclear arsenals: with the cessation of fissile material production, no new warheads could be built.

The second treaty, the Comprehensive Test Ban Treaty, better known by its acronym, CTBT, should be signed by the US and ratified by other states as quickly as possible. This treaty, building on previous testing bans such as the Partial Nuclear Test Ban Treaty of 1963, bans testing of nuclear weapons in its entirety. The treaty would serve as a huge boon for the non-proliferation regime, as nuclear weapons' deterrence capabilities mostly rest on physical evidence through tests. Although the French have used a computer model that simulates yield, the psychological deterrent factor of pictures of a mushroom cloud would in effect be discredited. In much the same way, as explored previously, untested biological and chemical weapons also have a limited deterrent effect, with regards to the general public. All nuclear tests serve as examples that despite their costs, they add value to deterrence. The CTBT, and its verification organization, the CTBTO, would be a milestone on limiting the deterrence capabilities of nuclear weapons and be a major step forward towards a world without nuclear weapons. Thus those 44 states who have currently not signed and the other who have not ratified must follow suit in this enterprise. Both of these treaties are key on the road to zero and must happen during the initial stages.

### *Post-Cold War Generation and Safety in Small Numbers*

Today's security environment is characterized by the realities of a post-Cold War era. This generation should focus on achieving the gradual reduction of force in US and



Russian arsenals, which still account for 95% of nuclear forces. As advocated by the “Four Horsemen of the Apocalypse” in their op-ed piece, Sam Nunn, Henry Kissinger, William Perry and George Shultz call on US-Russian co-operation in reducing their stockpile.<sup>121</sup> As Levi and O’Hanlon state: “another round of informal cuts makes sense. Even nuclear superpower arsenals of 1,000 warheads each [...] would preserve many hypothetical response options beyond city-busting.”<sup>122</sup> In a bipolar world, their nuclear weapons policies and Mutual Assured Destruction, or MAD, unorthodoxly made sense and aided in a more secure superpower relationship. With the end of the Cold War, marked by the joint statement by then Soviet Premier Gorbachev and former US President Ronald Reagan at the Malta Conference, these numbers are no longer needed. Arms control regimens that were in effect first to limit the spread and later to decrease the number of nuclear weapons should continue. Continuing in the path of SALT I, SALT II, START I, and now New START, the post-Cold War Generations’ ultimate goal should be to limit these two former nuclear superpowers to engage in further reductions, “removal of massive attack scenarios from strategic plans,”<sup>123</sup> and even consider ban on tactical nuclear nukes (as suggested by the CSIS Nuclear Strategy Group<sup>124</sup> and in a more

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<sup>121</sup> Schultz, George., Perry, William J., Kissinger, Henry A., and Nunn, Sam. “Toward a Nuclear Free World,” *The Wall Street Journal*, January 15, 2008.

<sup>122</sup> Levi, Michael A., and O’Hanlon, Michael E., *The Future of Arms Control*, Brookings Institute Press, Washington, 2005.p. 25.

<sup>123</sup> *Ibid.*

<sup>124</sup> “A Nuclear Peace: The Future of Nuclear Weapons in U.S. Foreign and Defense Policy”, CSIS Nuclear Strategy Group, June 1993.

detailed form, by Global Zero's NATO-Russia Commission Report).<sup>125</sup> Some previous strategic thinkers' recommendations, in particular Bundy et al.'s policy recommendations<sup>126</sup> of 1,500 nuclear warheads on Russian and US side have actually realized with the New START treaty limiting the number of warheads to 1,550 each.<sup>127</sup>

Achieving that and dealing with the end of the Cold War is the only challenge they can face in the time allotted. The number 1,000 has to be backed by strategic thinking, as is the case presented by Daalder and Lodal,<sup>128</sup> who accurately sum up the reasons behind it: that the existential threat to the US from the Soviet Union has dissolved and fewer numbers of weapons are needed for deterrence than for war fighting.<sup>129</sup> This number, designate 1,000, has two separate goals: the direct one is reducing the number of nuclear weapons available *per se*, but the other, indirect and equally important role, is having nuclear weapon equilibrium enter into US and Russian policy makers though processes by demystifying the "nuclear superpower" concept. While it will not achieve it, the number will be sufficiently small that other nuclear weapons powers will want to achieve the same level to gain equal footing and weight in the international community. This step would also further reinforce the major two's commitment towards a complete nuclear disarmament as put forth by Bridgman and the

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<sup>125</sup> Global Zero, URL: <http://www.globalzero.org/en/nato-russia-commission-report>

<sup>126</sup> Bundy, McGeorge, Crowe, William J, and Drell, Sindey D. *Reducing Nuclear Danger: The Road Away from the Brink*. Council on Foreign Relations Press, New York, 1993.

<sup>127</sup> New START Treaty, Department of State, URL: <http://www.state.gov/t/avc/newstart/index.htm>

<sup>128</sup> Daalder, Ivo, and Lodal, Jan. "The Logic of Zero: Toward a World Without Nuclear Weapons," *Foreign Affairs*, November/December 2008.

<sup>129</sup> *Ibid.*

Union of Concerned Scientists<sup>130</sup>. Global Zero's Action Plan also calls for this next step, and their calls have not gone unheeded with pieces being published in *The Economist*<sup>131</sup> and other influential newspapers, such as the *New York Times*.<sup>132</sup> Yet the full potential of equality between nuclear weapons states is left to the next generation.

Thus the post-Cold War generation must and can focus on achieving the next step, 1,000 nuclear weapons by Russian and US nuclear forces. Janne Nolan points out that US-Russian co-operation is key to the non-proliferation regime. She states that: "the two sides should seek to open more specific talks on means to maintain a stable US-Russian partnership as part of a move to smaller and safer nuclear forces."<sup>133</sup> The non-proliferation regime must capitalize on the Obama administration's nuclear weapons free movement. The Obama administration and the Nuclear Posture Review of 2010 are seminal in that they not only considers "nuclear disarmament is good security policy but is a well-developed statement of the argument itself."<sup>134</sup> In a *Foreign Policy* poll, out of the 74 security experts polled, the largest group said that 1,000 nuclear weapons is all that the US should have.<sup>135</sup> The unofficial talks of the next, follow-on START treaty, will

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<sup>130</sup> Bridgman, Jim, et al., "Toward Nuclear Sanity," Union of Concerned Scientists, April 2003.

<sup>131</sup> *The Economist*, URL: [http://www.economist.com/node/18834021?story\\_id=18834021&fsrc=rss](http://www.economist.com/node/18834021?story_id=18834021&fsrc=rss)  
<http://www.economist.com/node/18836134>

<sup>132</sup> New York Times Online, URL: [http://www.nytimes.com/2012/03/12/opinion/the-nuclear-implementation-study.html?\\_r=1](http://www.nytimes.com/2012/03/12/opinion/the-nuclear-implementation-study.html?_r=1)

<sup>133</sup> Nolan, Janne E. *An Elusive Consensus: Nuclear Weapons and American Security After the Cold War*. Brookings, Washington, 1999. P. 94.

<sup>134</sup> Griffith, Lewis, and Campbell, Edwina. "Obama and the Path to Zero: Thrust and Vector versus Speed and Distance", working paper. p. 103.

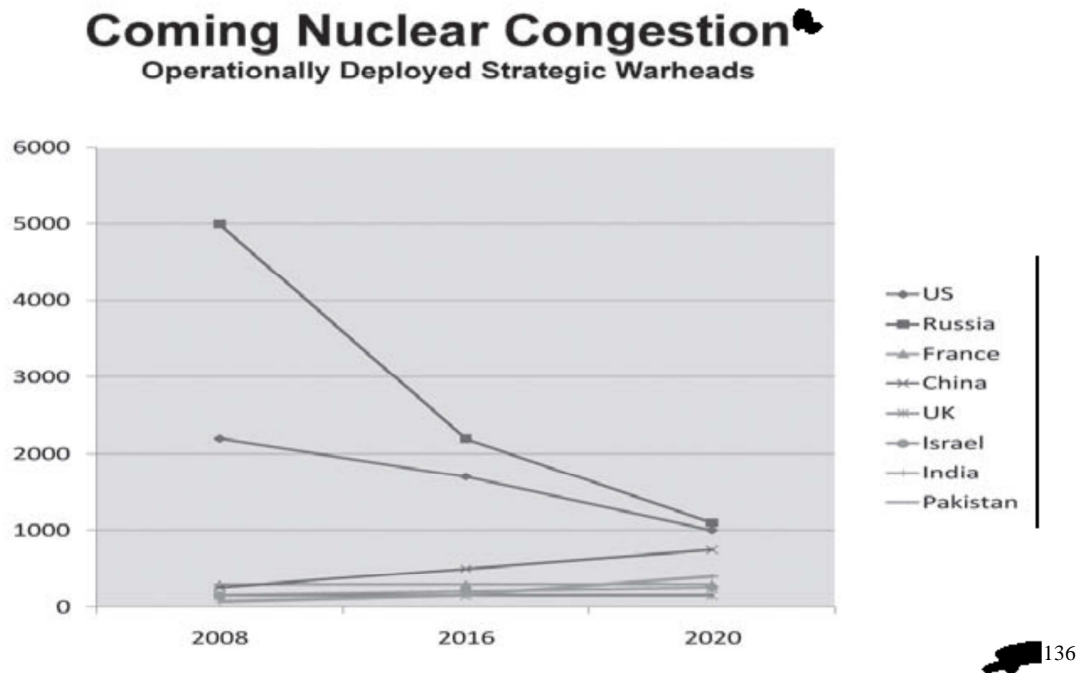
<sup>135</sup> *Foreign Policy*, March/April 2012. "The Future of War: The FP Survey".

probably resume if Obama is re-elected for a second term. Thus achieving this next step is within the purview of the post-Cold War generation and is essential in both re-committing nuclear powers on the road to zero and for them to realize that drawdowns are an effective method for increasing safety. Along this road to zero, most of the weapons currently deployed must be subsequently placed in reserves to strengthen the No-First-Use policy. While almost all states ascribe to defensive use only, nuclear weapons' deterrence versus other forms of WMD have led some to reserve the right to use them. For the nuclear non-proliferation regime to effectively limit nuclear weapons to the realm of strictly counter-nuclear deterrence, a more global ascription to No-First-Use is recommended as explored in China's nuclear strategic culture, although not required in the early stages of the road to zero.

### *The 1,000ers and Proliferation*

Once enough time has passed, the following generation will regard 1,000 as the 'nuclear superpower' number (instead of the 40,000 warheads at the height of the Cold War). Yet this number is now within their reach. The sense that all NPT members and non-NPT nuclear weapons states should be equal is not far-fetched. In effect, the coming nuclear congestion, as detailed by Henry Sokolski, may be achieved sooner than we think. The following graph shows one possibility of converging nuclear weapons stockpiles, although it must be noted that even though it may seem close, the 1,000 envisioned as the 'top' number will still be 3-5 times as much as the other nuclear powers

arsenals.



Arguments for equal nuclear forces are less reliant on nuclear deterrence in a complex environment and more on the societal norm that nuclear weapons should not be used. Deterrence theory, in a bi-polar nuclear world, made calculations and Schelling's game theory applications feasible and traceable, with both sides understanding the limits and ramifications.<sup>137</sup> With other nuclear powers entering the regime, these strategic deterrent calculations would have had to be re-evaluated based on alliances and multi-order nuclear effects. They have not been since the collapse of the Soviet Union. The PRC does not base its nuclear deterrent on a possibility to be able to maintain a stable

<sup>136</sup> Sokolski, Henry. "Moving Toward Zero and Armageddon", in Sokolski, Henry (ed)., *The NPT's Potential to Prevent Nuclear Proliferation*, p. 80.

<sup>137</sup> Schelling, Thomas. *The Strategy of Conflict*. Harvard University Press, Cambridge, 1981.

second strike capability versus a US-Russian alliance's nuclear forces.<sup>138</sup> Instead, Chinese strategic thought attempts to maintain a credible minimal deterrence and a 'safe' second strike nuclear force against "any" potential attackers, without creating a stockpile that is actually efficient against multiple opponents. Other states have exhibited similar policies, with France and UK's so called "Moscow Option" nuclear deterrence theory. The concept of minimal deterrence is very much a socio-political construct and does not have to be based on hard strategic worst-case scenario calculations. If this is the case, the number of nuclear weapons needed for it is variable and can be limited if the international concept changes.

Furthering the Non-Proliferation Treaty's Article VI commitment, Russia and US will have to contend that it is possible to satisfy their need for a perceived strategic deterrent with a force much smaller than 1,000 if the alternative is for others to build more. The consistent economic argument, that maintenance and safeguarding of a nuclear arsenal is costly, is further reinforced by the possible strategic inefficiency of finite resources by maintaining a deterrent force larger than required. Thus the concept of minimal deterrence will have undergone its first generational conceptual shift. Other P5 members, currently have – and for a significant amount of time maintained an equal number – over 200 warheads (PRC at 240, UK at 160, France with fewer than 300).<sup>139</sup>

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<sup>138</sup> As Schelling mentions, but does not elaborate on as his thinking of deterrence was limited by the contemporary international security environment that was governed by a bi-polar US-Soviet relationship, the number that is considered stable with regards to alliances and attacks made by alliances is very different from a two player calculation.

<sup>139</sup> Arms Control Association, "Nuclear Weapons: Who Has What At a Glance", URL: <http://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat>, accessed April 1, 2012.

France and the UK are content with maintaining the so-called Moscow Option.<sup>140</sup> The Moscow Option is an ideal example of the concept of minimal deterrence, as it posits that the overwhelmingly superior nuclear forces of the Soviet Union can be deterred from being launched against French or British national assets due to the two maintaining a second-strike retaliatory capability, with enough yield and missiles to ‘take out’ Moscow. This concept works particularly well against the Russian psyche, as their understanding of the Motherland is very much united around two cities: Moscow and St. Petersburg, both historically not just the capitals of the country, but the ideological and psychological embodiments of Russian rationale. Thus this stage ends when all nuclear weapon states consider themselves equal and set their nuclear strategic reserves at equal numbers. This thesis posits that at 200 nuclear warheads and only multilateral talks with all nuclear weapons states can lead to it.

The road to zero is important as well. Not necessarily concurrently to achieving a “new” minimal deterrence, which, with current nuclear weapons stockpiles, can be said to happen at 200 nuclear warheads, the road of nuclear drawdowns has to be politicized as a tool for nonproliferation. The

“basic principle is that, in reducing existing nuclear weapons and nuclear-capable delivery systems, we include steps for preventing their further spread. Currently, the connection between reducing nuclear arms and preventing their spread is mostly symbolic.”<sup>141</sup>

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<sup>140</sup> Quote by Dr. Jeffrey Larsen in “European Defense Policies” class, University of Denver, 2011 Spring Quarter.

<sup>141</sup> Sokolski, Henry. “Moving Toward Zero and Armageddon”, in Sokolski, Henry (ed.), *The NPT’s Potential to Prevent Nuclear Proliferation*, p. 91.

This has to be the case and the path to zero must be advocated adamantly. Nuclear weapon states must continuously apply sanctions to those wishing to join the nuclear club all the while consistently re-affirming their commitment to the disarmament clause of the NPT. This part is to be maintained all throughout the road to zero as it is crucial for limiting further entries which would, as outlined above, exacerbate the current security environment.

### *The 200s Club and De-Alerting*

Once socio-political realities have adjusted to nuclear weapons being equally distributed, the nuclear weapon states can continue down the road to zero. The smaller the number of nuclear warheads, the easier it is to maintain supervision and appropriate safeguards measures. Also, inasmuch as deterrence works, the cost of it can also be ‘controlled’. Resources spent on maintaining a larger deterrent force than needed are resources wasted – alternate methods would increase strategic efficiency for states to fulfill their other obligations towards their population. Security is just one. By this point, the NPT and the non-proliferation regime must be sufficiently strengthened to be able to keep members inside. The exit clause must be rescinded and those not signatories must be kept under constant economic sanctions to participate. Finally, this step is also characterized by de-alerting.

Concurrently to nuclear drawdowns, but by this point necessarily, nuclear weapons must be de-alerted and de-targeted, with a sensible delay between their alerting



and their possible us. Potential nuclear accidents are one of the reasons to do so. Bruce Blair et al. aptly summarize it:

“That frightening incident [the 1995 Norwegian missile launch] (like some previous false alarms that activated U.S. strategic forces) aptly demonstrates the danger of maintaining nuclear arsenals in a state of hair-trigger alert. Doing so heightens the possibility that one day someone will mistakenly launch nuclear-tipped missiles, either because of a technical failure or a human error--a mistake made, perhaps, in the rush to respond to false indications of an attack.”<sup>142</sup>

They go on to outline how the post-Cold War nuclear legacy is still engrained within the strategic culture of the policy makers of today.

“So within just a few minutes of receiving instructions to fire, a large fraction of the U.S. and Russian land-based rockets (which are armed with about 2,000 and 3,500 warheads, respectively) could begin their 25-minute flights over the North Pole to their wartime targets. Less than 15 minutes after receiving the order to attack, six U.S. Trident submarines at sea could loft roughly 1,000 warheads, and several Russian ballistic-missile submarines could dispatch between 300 and 400. In sum, the two nuclear superpowers remain ready to fire a total of more than 5,000 nuclear weapons at each other within half an hour.”<sup>143</sup>

This strategic culture of the past can and should be changed. With the US-led Western World and the USSR-led Socialist world no longer set as enemies on a path necessarily leading to conflict, de-alerting is a logical step both to limit potential accidents and to induce further trust. By the time the international security environment has gone from two major nuclear superpowers to this international club of 200s, the probability of nuclear weapons use should be even more diminished. No-First-Use policies and FMCT and CTBT ratifications should further reinforce this concept of

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<sup>142</sup> Blair, Bruce G., Feiveson, Harold, and von Hippel, Frank N. “Who’s Got the Button? Taking Nuclear Weapons off Hair-Trigger Alert”, *Scientific America*, November 1997, from Center for Defense Information website, URL: <http://www.cdi.org/aboutcdi/SciAmerBB.html>, accessed April 1, 2012.

<sup>143</sup> *Ibid.*

nuclear weapons as a relic of stability of the past. While some would argue that a “fully de-alerted force would weaken deterrence against third parties, such as rogue states,”<sup>144</sup> inasmuch as this is concerned, immediate retaliation is not necessary for deterrence, only certain retaliation is, as put forth by Feiveson in *The Nuclear Tipping Point*. De-alerting steps must also be approached the same way the road to zero: combining strategic perceived reality with normative values, as beneficial for humanity. Bruce Blair outlines the necessary steps: step one, eliminate massive attack options and launch-on-warning status from nuclear repertoires; step two, implement physical steps that add lead time to launches; step three, warheads and delivery vehicles would be separated but kept in proximity, and finally, in step four, delivery vehicles and nuclear warheads would be stored in separate locations.<sup>145</sup>

Inasmuch as specific de-alerting steps are concerned, Dr. Blair’s argument is only valid for current nuclear arsenals – those of the future might have different specifications. Yet the concept remains essentially the same. Some would even argue that hair-trigger alert is illegal under the International Court of Justice’s prohibition of use of force that would inflict indiscriminate harm, unnecessary suffering, and disproportionate damage to the environment.<sup>146</sup> By increasing the time needed significantly for launching a nuclear warhead, the proverbial “sword of Damocles” hanging over humanity’s head would be

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<sup>144</sup> Levi, Michael A., and O’Hanlon, Michael E., *The Future of Arms Control*, Brookings Institute Press, Washington, 2005, p. 35.

<sup>145</sup> Blair, Bruce. “Increasing Warning and Decision Time”, presentation at Global Zero Convention in Washington, DC, May 2011.

<sup>146</sup> “The Legal Case for De-Alerting Nuclear Weapons”, The Lawyers Committee on Nuclear Policy, URL: <http://lcnp.org/disarmament/dealerting.htm>, accessed April 1, 2012.

moved further off. For societies not having to live under the fear that any moment the decision could be made that global thermonuclear war become a reality would increase their safety significantly. This step is crucial to be achieved for the next stage to be able to set in. De-alerted nuclear forces, while still offering perceived deterrence, further remove their potential use from societies.

### *Asymptotic Minimal Deterrence and Verification*

This penultimate stage is characterized by the drawdown of nuclear weapons to an even lower number, with multi-national talks. Once the number 200 seems as out-dated and as illogical as 40,000, the nuclear deterrent needed can be further reduced, to an even smaller number. McGeorge Bundy would posit, and this work agrees with it, is that nuclear weapons should and are only used to deter other nuclear attacks – the PRCs case shows that this in fact is feasible. Bundy states in *The Use of Force* that

“I think, that these weapons [nuclear] have not been of great use to any governments for such wider purposes [non-nuclear deterrence], and I also think that misreading of that record has led to grossly mistaken and to unnecessary, costly, and sometimes dangerous deployments.”<sup>147</sup>

Thus the logical conclusion, as supported by historical precedents, posits that stable nuclear relations exhibit similarly sized nuclear forces. While in this stage, the number will not be zero, but a vertical asymptote will be reached, with the number of nuclear weapons still in states’ arsenals limited by safeguards and economic arguments. The cost of maintaining nuclear weapons, as made explicit by the Brookings Institution

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<sup>147</sup> Bundy, McGeorge. “The Unimpressive Record of Atomic Diplomacy” in Waltz, Kenneth A. and Art, Robert J. (eds) *The Use of Force*, Rowman, Lanham, 2004. p. 86.

nuclear study, is extremely high. The cost of all nuclear weapons programs for the US alone until 1998 is estimated to be \$35,100,000,000.<sup>148</sup> By 2009, this number is at least at 52 billion US dollars. Choubey and Schwartz estimate that "only 1.3 percent (\$700 million) of the nuclear security budget was devoted to preparing for the consequences of a nuclear or radiological attack. Another 56 percent of the total went toward operating, sustaining, and upgrading the U.S. nuclear arsenal."<sup>149</sup> The authors also argue that

"Nuclear security consumes \$13 billion more than international diplomacy and foreign assistance; nearly double what the United States allots for general science, space, and technology; and 14 times what the Department of Energy (DOE) budgets for all energy-related research and development."<sup>150</sup>

Global Zero capitalizes on this cost and puts it into more readily comprehensible terms by stating that one missile costs 400 scholarships. Yet as economic and other arguments outlined above draw these numbers further and further down, verification of international treaties and implementations thereof will become increasingly important. Kalinowski would claim that the number of deployed nuclear weapons can be drawn down to 10-20 if similar steps are met (although his theories, presented in 2000, have not seen the prerequisites fulfilled and as such, the timing is off).<sup>151</sup>

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<sup>148</sup> Schwartz, Stephen. "U.S. Nuclear Weapons Cost Study Project", taken from Brookings Institute "50 Facts About Nuclear Weapons", URL: <http://www.brookings.edu/projects/archive/nucweapons/50.aspx>, accessed April 1, 2012.

<sup>149</sup> Choubey and Schwartz. "Nuclear Security Spending", from Carnegie Endowment Online, URL: <http://carnegieendowment.org/2009/01/12/nuclear-security-spending-assessing-costs-examining-priorities/16q>, accessed April 11th, 2012.

<sup>150</sup> *Ibid.*

<sup>151</sup> Kalinowski, Martin (ed)., *Global Elimination of Nuclear Weapons*, Nomos, Baden Baden, 2000.

Almost all current nuclear weapons abolition movements call for short-term nuclear eliminations and world-wide implementation and verification regimes. Yet as O’Hanlon clearly states, not only are current sensors unable to scan large amounts of territory for nuclear weapons<sup>152</sup>. Furthermore, this technology is not yet on the horizon.<sup>153</sup> The technological argument that it will not become possible to reliably monitor all nuclear materials in the next few decades is a major strike against the nuclear abolitionist cause.<sup>154</sup> Thus the problem cannot be solved in the near future – but by the time the previous stages have been completed, more than a few decades would have passed. Computing power has doubled according to Moore’s Law in the last decades and will do so in the near future – thus it is safe to assume that the possibility of future systems being able to verify internationally such implementation regimes will be a reality in the future, even if not the near future. Universal verification at this point is instrumental to the non-proliferation regime, both to deter nuclear capable states from seeking break-out options and for nuclear weapons states to hide warheads.

Whether a new treaty is needed to accomplish this or the Nuclear Non-Proliferation Treaty suffices, is more a matter of semantics than actual strategic considerations. The NPT can be amended to include the new requirements for global zero, or Jurgen Scheffran calls for, a new Nuclear Weapons Convention can be negotiated,

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<sup>152</sup> O’Hanlon, Michael. *Technological Change and the Future of Warfare*, Brookings, Washington DC, 2000, p. 162.

<sup>153</sup> *The Future of US Nuclear Weapons Policy*, Committee on International Security and Arms Control, p. 90.

<sup>154</sup> O’Hanlon, Michael. *Technological Change and the Future of Warfare*, Brookings, Washington DC, 2000, p. 163.

to include international verification and implementation procedures.<sup>155</sup> Multiple authors call for robust verification systems to be in place (former UN High Representative for Disarmament, Duarte Sergio, and former IAEA Director General Muhammed ElBaradei, are two high level politicians who do so). The details of such a verification and implementation regime are technical and beyond the scope of this paper, but as previous arms control treaties, if backed by political will, have proved successful. One other weakness of the NPT is the withdrawal clause. North Korea has successfully used this clause to leave the treaty and as such, has successfully avoided IAEA and international supervision of the DPRKs nuclear program. Thus either the NPT or this new NWC must have a non-withdrawal clause, or as Rotblat et al. claim, no provisions for withdrawal from the treaty and severe repercussions for attempting to do so.<sup>156</sup>

### *Trust Fund Kids*

This last stage is the process by which asymptotic deterrence is furthered to global zero, where no warheads remain operational, and, after having been de-alerted, are stored away from their delivery systems. The “Trust Fund Kids”, who will see the work and effort of their predecessors mature in their generation, will have the option of finalizing this step. After they secure the needed implementation and finalize the verification of the nuclear weapons system, they will be presented with the option of eliminating the weapons themselves from reserve forces as well. By this time, nuclear forces can be

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<sup>155</sup> Scheffran, Jorgen, in Falk, Richard, and Krieger, David, (eds.), *At the Nuclear Precipice: Catastrophe or Transformation*. New York, Palgrave Macmillan, 2008.

<sup>156</sup> Rotblat, Joseph, Steinberger, Jack, Udgaonkar, Bhattachandra, and Blackaby, Frank (eds.), *A Nuclear-Weapon-Free World: Desirable? Feasible?* Westview, Boulder, 1993.

considered to have been de-operationalized, not as a form of deterrence, but as a form of “national insurance.”<sup>157</sup> The non-proliferation regime must focus on stating that a de-operationalized nuclear arsenal is not a source of threat for any members of the international community. The technology and blueprints of nuclear weapons, bar a global catastrophe, will not be forgotten. If nuclear weapons still remain humanities best defense against extra-terrestrial objects, and remains as the best alternative for planetary defense, then a contingent of nuclear weapons must be placed within an international supervisory body’s hands.<sup>158</sup> These weapons will also be de-operationalized and kept at a minimum. This generation will have the option of finalizing global zero by upping the sanctions already in place and internationally delegitimizing even the start of a process of nuclear weapon re-installment.

### *The World without Nuclear Weapons*

As Victor Gilinsky so aptly summarizes our current thinking: “We sometimes contemplate the possibility of a worldwide nuclear breakdown, but I think we do so only on an intellectual level. We do not really believe it can happen. If we did, we would behave differently.”<sup>159</sup> No one would believe that a nuclear explosion right now would be

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<sup>157</sup> Mazarr, Michael J., and Lennon, Alexander T. (eds.), *Toward a Nuclear Peace: The Future of Nuclear Weapons*. New York, St. Martin’s Press, 2004.

<sup>158</sup> *Ibid.*

<sup>159</sup> Gilinsky, Victor. “How Will the Nuclear Story End?”. in Sokolski, Henry (ed.), *The NPT’s Potential to Prevent Nuclear Proliferation*, p. 67.

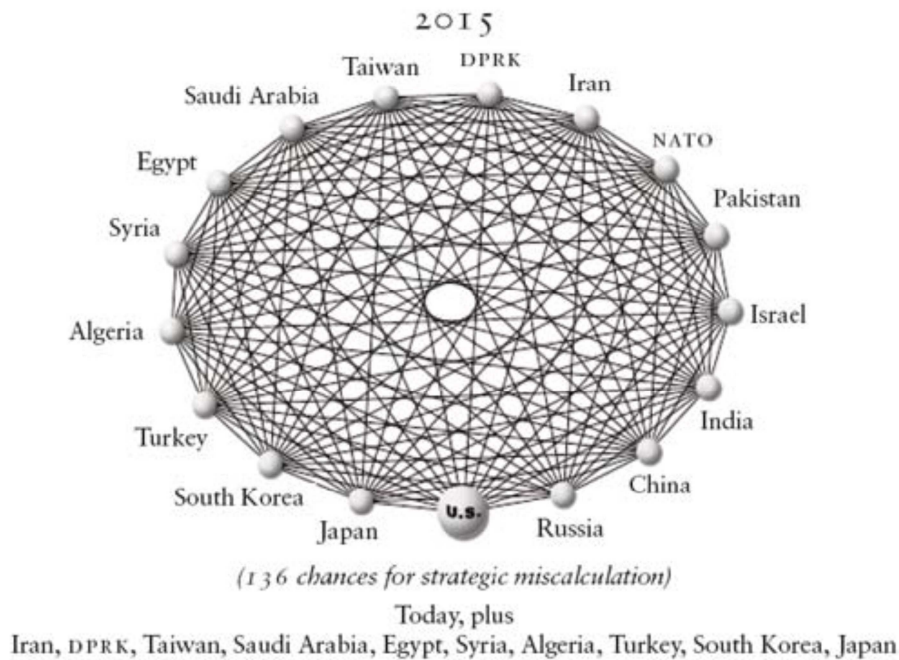
a ‘good thing’, yet it would most likely further the cause of global zero along.<sup>160</sup> Whether a catastrophe is needed for the international community to act on this matter remains to be seen. As outlined above, the problems with nuclear weapons do not present themselves to be solved overnight. Even if the will was there by all participants, trust can only be built through long-term confidence building measures and time. This way to global zero attempted to show that for this trust to develop to adequately deal with the threat of nuclear weapons, multiple decades are needed. By a slow process, the risk of miscalculation is highly reduced and the potential for cooperation is greatly increased. The following figure shows a model for the interstate relations that would happen if proliferation continues and those states who are nuclear capable in fact acquire them in the near future.

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<sup>160</sup> Private conversation with Dr. Bruce Blair at GZ DC May 2011, Washington DC.



FIGURE 4  
*With more nuclear-ready states: ramp up to a nuclear 1914?*



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With the number of potential conflict areas exponentially increasing, the threat of cataclysm rises. The only way to combat proliferation effectively is embark on the path to zero. The rationale, even with its constraints, is a worthy one, and the path outlined above has the potential to minimize the strategic risks involved while building on a normative reality that, upon entrance into public consciousness, will increase security for all involved. Through these stages outlined above, the non-proliferation regime can embark on the road to zero all the while satisfying security risks inherent to each stage. While considerable resources must be spent to keep the verification regime operational, the end state is a safer and more secure global environment.

<sup>161</sup> Sokolski, Henry. "Moving Toward Zero and Armageddon", in Sokolski, Henry (ed.), *The NPT's Potential to Prevent Nuclear Proliferation*, p. 85.

Barring a global catastrophe on the scale of the Dark Ages, the international community will not forget the technology and blueprints of nuclear weapons. If the world sees the invention of weapons that are more destructive than nuclear weapons, the situation shifts dramatically, perhaps to the point that talking about nuclear weapons will no longer be relevant. The Trust Fund Kids generation will have the option of finalizing global zero by internationally delegitimizing the start of a process of nuclear weapon re-installment. Building on the past generations' efforts, the Trust Fund Kids will ultimately be able to decide what to do with their legacy. Whether they will spend the resources to maintain the international regime or let the efforts of their predecessors go to waste and engage in a new nuclear arms race is ultimately their decision. Without question, the road to zero will be neither quick nor easy.

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